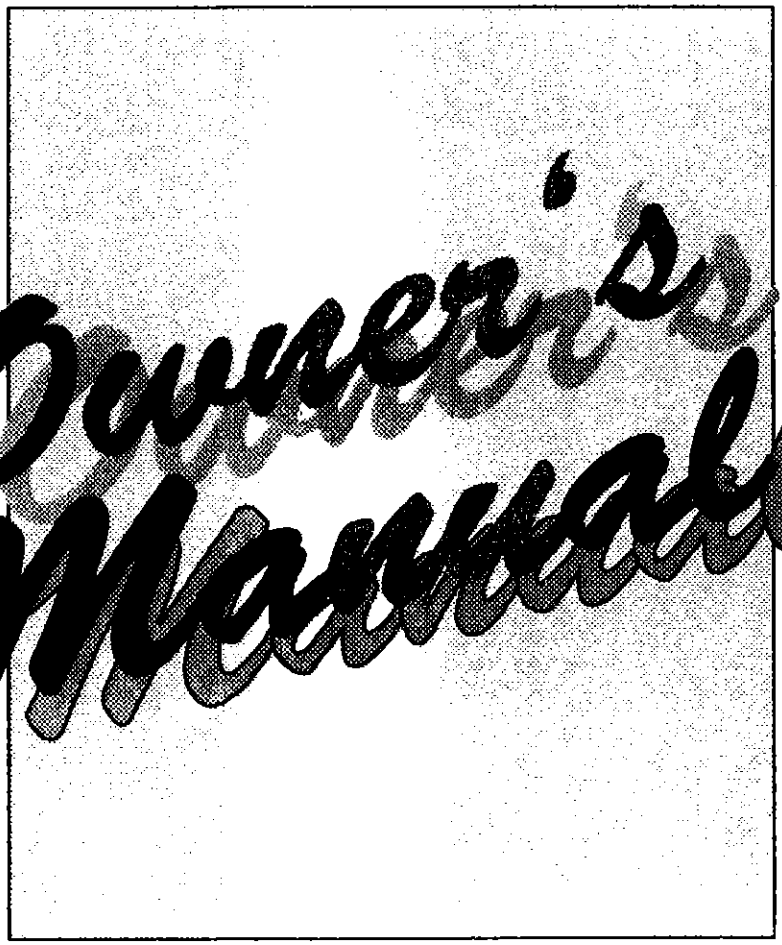
THE PREVOST LE MIRAGE XL

FACTORY PREPARED CONVERSION READY LUXURY MOTORCOACH



PREVOST®

Welcome To The Ultimate In Luxury Motorcoaching

The PREVOST Le Mirage XL is designed and built to be the ultimate in factory-prepared, conversion-ready luxury motorcoaches. Behind every Le Mirage XL, you'll find a commitment to excellence that goes back nearly 70 years, with a proven performance record that is literally hundreds of millions of miles long - on every road and in every climatic condition imaginable, from frozen arctic tundra and blazing hot desert conditions to the sweltering rains of the Everglades. PREVOST's been there and back to tell the tale. So you can too! This Owner's Manual tells you how.

You also find the largest research and development department of its kind anywhere in North America. Because at PREVOST, our commitment to excellence extends well into the future, which is where all the best in motorcoaching is yet to be.

It gives me great pleasure to welcome you to the proud and growing family of PREVOST Le Mirage XL motorcoach owners.

Bon Voyage! and Happy Motorcoaching!

President

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FOREWORD

This Owner's Manual has been prepared to give you necessary information to help you in operating your vehicle safely. Of course, you are anxious to drive your new private coach and test its features, but first please read this publication carefully to help assure enjoyable and troublefree operation. This book should be kept in vehicle for convenient reference at all times. We also suggest that it remains with the vehicle at the time of resale. Please notify PREVOST CAR INC. if the vehicle ownership is transferred so that our records can be kept current. Use appropriate form at the end of this manual.

The specifications, descriptions and figures given are based on the latest information available at the time of printing. Since improvement is a constant goal at PREVOST, we reserve the right to make changes at any time without notice and without incurring any obligation.

Please note that this publication applies to factory-prepared, conversion-ready luxury motorcoaches manufactured by PREVOST CAR INC. and explains all equipment including options installed in our factory. Therefore you may find explanations for equipment not installed on your vehicle. It does not explain equipment installed by your interior designer and systems manufacturer.

The following words are used to emphasize particular information:

WARNING: Identifies instructions which if not followed, could result in personal injury.

CAUTION: Denotes instructions which if not followed, could cause serious damage to vehicle components.

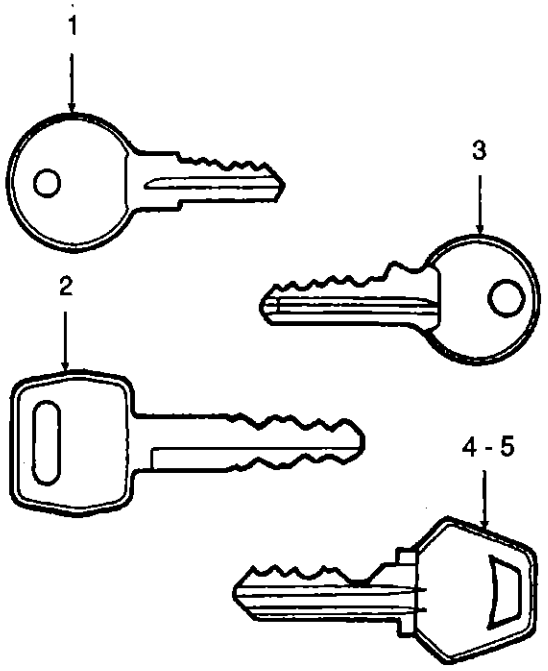
NOTE: Indicates supplementary information needed to fully complete an instruction.

For your own protection and to ensure a longer service life of your private coach, heed our cautions, warnings and notes. Ignoring them could result in extensive damage and/or serious personal injury.

OPERATING INSTRUCTIONS

KEYS

According to optional equipment, up to five (5) different key models may have been provided with the vehicle, which are used as described hereafter:



1. Ignition switch
2. Baggage compartment door locks
   Front electric compartment door lock
   Steering compartment door lock
3. Engine compartment door lock
   Engine R.H. side access door lock
   Engine L.H. side access door lock
   Engine oil reserve tank access door lock
   Coolant surge tank access door lock
   Fuel tank filling access door lock
4. Front entrance door lock
5. Central entrance door lock

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NOTE: For your protection against theft:

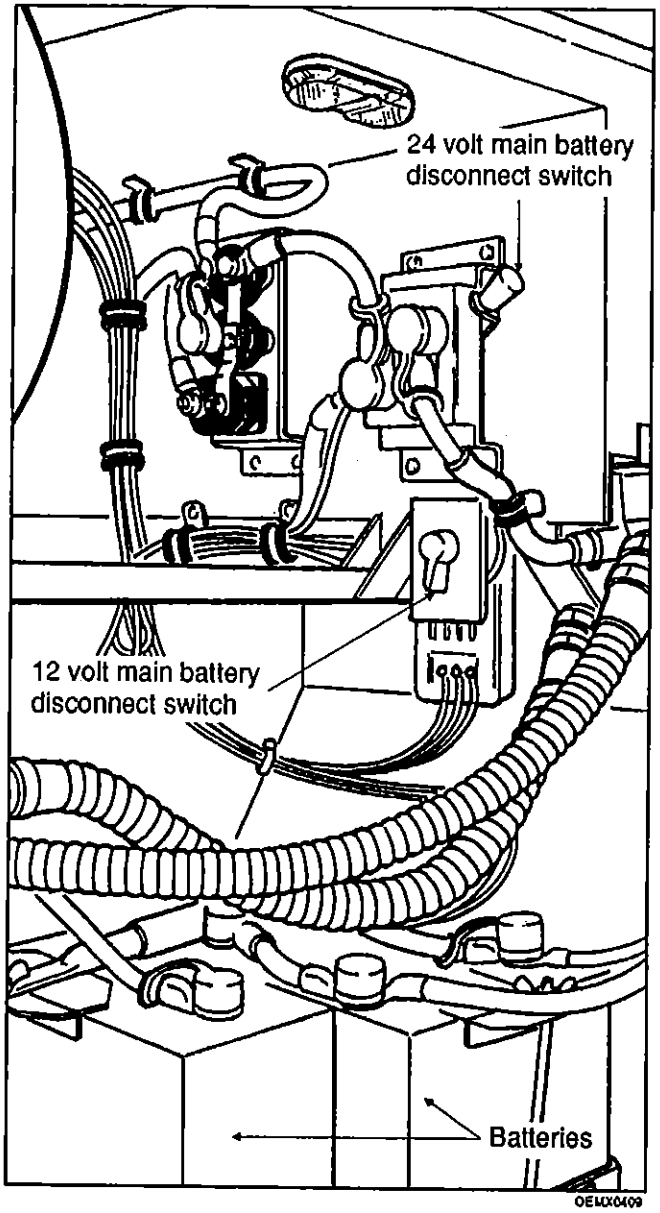
a) Record the key numbers and keep them in a safe place. Do not keep them in the vehicle.

b) It is advisable to deposit a duplicate of each key in a safe place, so they can be obtained without difficulty in case of loss.

MAIN BATTERY DISCONNECT SWITCHES

The 24 volt main battery disconnect switch is located over batteries and is accessible by the engine R.H. side access door.

The 12 volt main battery disconnect switch is located right under the 24 volt disconnect switch.



CAUTION: When vehicle is parked overnight or for a longer period of time, both battery main disconnect switches (24 V & 12 V) should be set to *"OFF"* position in order to avoid battery voltage imbalance.

NOTE: When both main battery disconnect switches are set to *"OFF"* position, all electrical supply from the batteries is cut off, with the exception of the ECU (Electronic Control Unit) for the ATEC system (Allison Transmission Electronic Control).

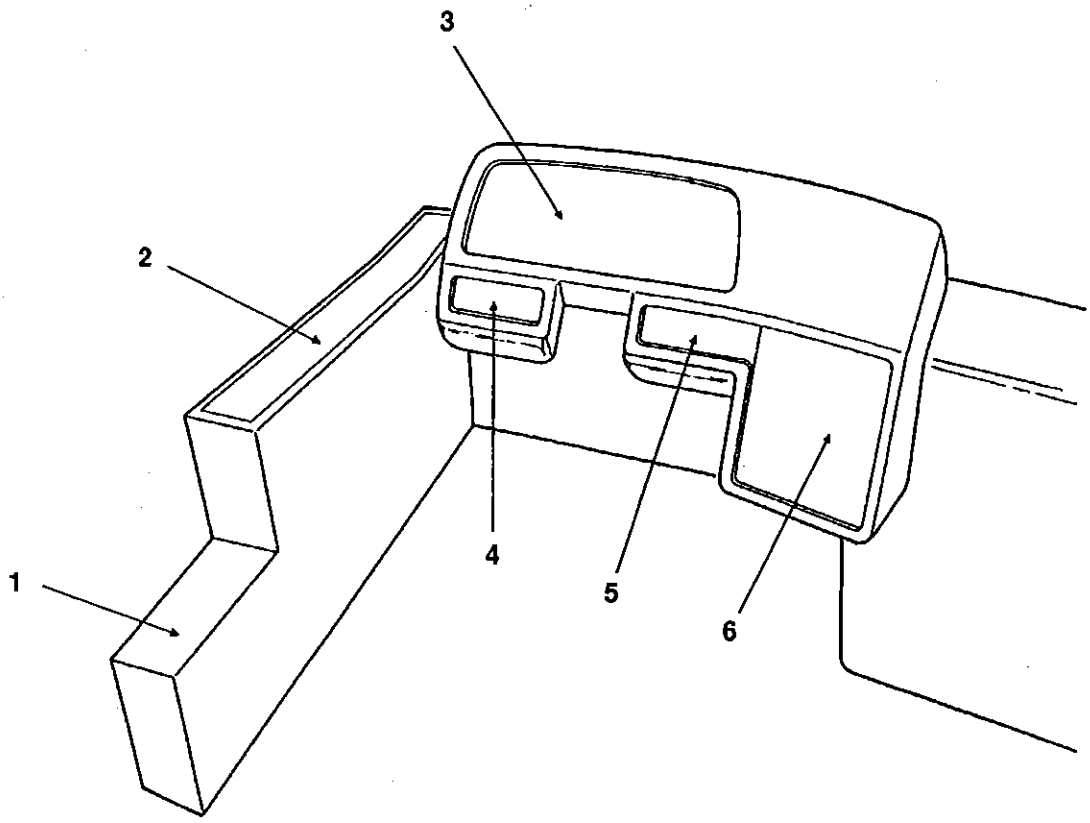
FUEL TANK FILLING

Fuel filler neck is accessible by opening a small door located on R.H. side, amidships of vehicle.

NOTE: Provided vehicle is parked level, automatic nozzle will shut off when tank will be approximately 95% full.

CAUTION: Do not fill to more than 95% of fuel tank capacity.

DRIVER'S AREA



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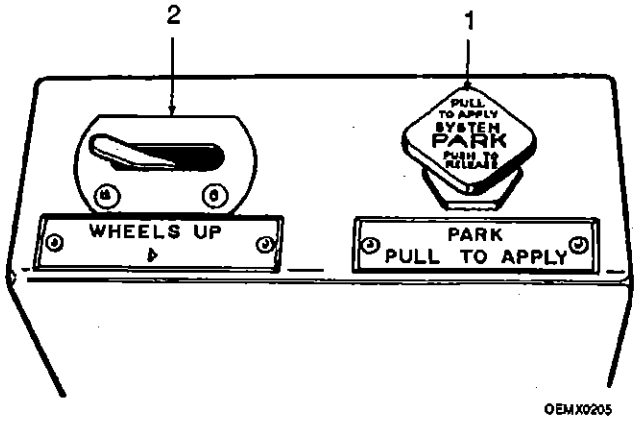
Control valves



1. Parking brake

See *"Combination emergency and parking brakes"* under heading *"Brakes"* page 2-14.

2. Tag axle

The tag axle is located directly behind the drive axle. Operation of the axle is controlled by a valve located at left of driver's seat alongside parking brake control knob. The valve can be flipped to either one of the two positions, *"wheels up"* or *"wheels down"*.

Axle will automatically be raised or lowered by air pressure according to switch position. Tag axle service brakes operate only when axle is lowered.

CAUTION: Tag axle should never be raised or lowered while vehicle is in motion, and should always remain lowered during normal operation.

When tag axle is raised, the corresponding indicator light will illuminate, and a beep will sound to remind you that axle is up. There are two cases where it may be convenient to raise the tag axle:

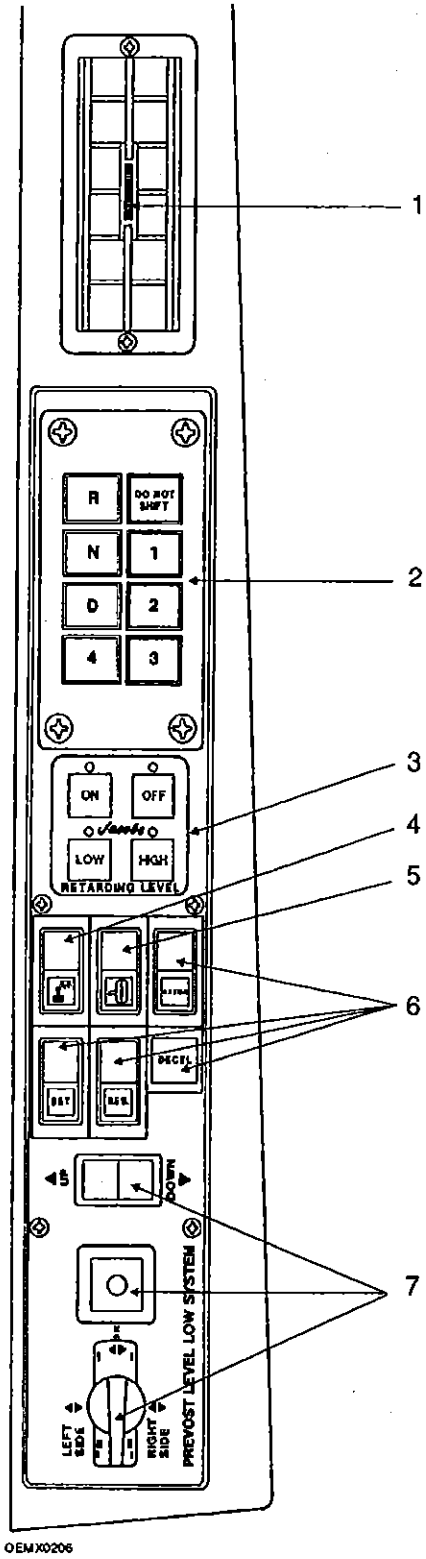
First, on slippery surfaces such as snow, where raising the tag axle will transfer extra weight and additional traction to the drive wheels, and second, when maneuvering vehicle in tight areas such as a parking lot, where raising the tag axle shortens the wheelbase and allows tighter turning.

CAUTION: Do not raise tag axle on soft surfaces such as mud, since the drive axle will tend to sink deeper.

After either of the above uses, vehicle must be stopped, then tag axle must be lowered before resuming normal driving.

Side control panel

(see next page for details)



1. Adjustable louver

The louver is manually adjustable, so the heated or cooled air flow can be directed toward driver or side window.

2. Transmission push button shift selector

To select forward, neutral or reverse range of transmission (see *"Range selector"* in this page).

3. Jacobs engine brake push button switches

Pressing the *"ON"* push button switch automatically activates system to half engine brake (Lo position); press *"HI"* push button switch for a full application of engine brake (see page 3-1). Each engine brake switch is provided with an indicator light.

NOTE: The engine brake is operative only when throttle pressure is released, and when engine rpm is approximately over 900.

Engine brake operation will automatically be cancelled after shutting engine. To resume engine brake operation, engine brake system must be actuated again.

Each time the engine brake system is in operation, the stoplights will automatically light up.

4. Driver's light switch (overhead lights)

Driver's light electric circuit is connected to 2 three-way switches; thus, it can be actuated with this switch or by means of the toggle switch located at extreme right of dashboard. Push rocker down or up according to toggle switch position.

5. Exterior mirror heating switch (for vehicles so equipped)

Push down rocker switch to heat both exterior mirrors.

6. Cruise control switches (see page 2-6)

7. Level low system controls (see page 2-7)

Allison Transmission Electronic Control (ATEC)

The operation and driving of this vehicle with an automatic transmission is similar to the driving of an automobile equipped with an automatic transmission. Proper ranges should be selected according to driving speeds to improve vehicle performance and control. The transmission is fully automatic. Speed ratio of power converter changes automatically as vehicle speed increases and direct-drive goes in and out as necessary, modulated by vehicle speed, and accelerator position.

Range selector

The push button-type range selector is totally electronic. The range selector displays seven push button pads:

R (reverse), N (neutral), D (drive), 4 (fourth), 3 (third), 2 (second), and 1 (first). The range selector also has a *"DO NOT SHIFT"* light and a warning tone or buzzer.

Operation

When any of the push button pad is pressed, a beep sounds and the pad lights up to indicate the transmission is ready to operate in the selected range. When the ATEC system detects a serious problem in the transmission, a buzzing tone sounds for 5 seconds, and a *"DO NOT SHIFT"* light turns on to warn the driver that the transmission is held-in-gear. If another pad is depressed, the buzzing sound will continue until the original range is selected.

NOTE: As a light bulb check and system check, the *"DO NOT SHIFT"* light will flash with the ignition switch *"ON"*. After about two seconds the light will turn off. If the *"DO NOT SHIFT"* light remains on, the self-diagnostic system has detected a problem. If the problem disappears, the light will go out, but a trouble code will remain stored in the ECU.

A) Reverse (R)

Use this position for backing vehicle. Stop completely before shifting from forward to reverse or from reverse to forward. Touch the reverse (R) pad, the light under the R pad will turn on and the reverse warning signal will be activated, provided the back-up warning signal switch is *"ON"*.

B) Neutral (N)

Use this position to start engine. Select neutral (N) when checking vehicle accessories, and for extended periods of engine idle operation; parking brake must then be applied. The push button range selector will automatically select neutral when the master switch is turned on.

CAUTION: Detroit Diesel engines should not be idled for extended periods at *"low"* idle (approximately 550 rpm). For extended idling, engine should run at *"fast"* idle (approximately 1100 rpm).

WARNING: Always apply parking brake before leaving driver's seat.

C) Drive (D)

Use this high range for all normal driving conditions. After touching this pad, the vehicle will start in first or second range and will automatically upshift to a higher range as output speed increases. As the vehicle slows down, output speed decreases, and the transmission automatically downshifts to the correct range. If a locked brake or a slick surface condition should occur, the ECU (Electronic Control Unit) will command converter operation (disconnect lockup) and inhibit downshifts for a period of time or until normal wheel speed has been restored.

NOTE: The transmission should normally be allowed to shift itself, but manual shifting can be used as described below.

D) Fourth (4) and Third (3) ranges

Select these ranges when driving on moderate grades, or when load and traffic conditions require the use of limited speed.

E) Second (2) range

Select this range when operating in heavy and congested traffic. The transmission will start in first and automatically upshift to second. When slowing, the transmission will automatically downshift to first range. Low ranges provide progressively greater engine and retarder braking power (the lower the range, the greater the engine and retarder braking effect).

F) First (1) range

Select this range when pulling through mud and snow, or when speed control is needed for driving up steep grades. This range also provides maximum engine braking power or retarder braking effect. In the lower ranges (1, 2, 3, and 4), transmission will not upshift above the highest gear selected unless recommended engine governed speed for that gear is exceeded.

CAUTION: Service brakes (foot pedal) should not be used to control the speed of vehicle on long, steep descents. Instead, lower transmission ranges should be used (in conjunction with Jacob's brake if so equipped). When descending in lower ranges, care must be taken that engine speed does not exceed 2450 rpm. This procedure keeps service brakes cool and ready for emergency stopping.

Cruise control switches

Introduction

The cruise control is an automatic speed control system that allows you to maintain a constant cruising speed above 35 m.p.h. (55 km/h) without depressing the accelerator pedal. The four (4) control switches are located on the side control panel in driver's compartment (see page 2-4).

WARNING: Do not use the cruise control system when driving conditions do not permit maintaining a constant speed, such as in heavy traffic or on roads that are winding, icy, snow covered, slippery, or with a loose driving surface.

Setting vehicle speed

To turn on the system, push down *"Cruise"* rocker switch, set the vehicle speed by accelerating to the desired speed and momentarily press and release the *"SET"* switch, then remove your foot from accelerator pedal. This sets the cruising speed and stores it in memory, thus maintaining speed automatically.

NOTE: Cruise control system will not accept speed settings, nor will the *"RESUME"* switch operate, below approximately 35 m.p.h. (55 km/h).

Increasing set speed

Vehicle speed setting may be increased by one of the following methods:

1. Press and hold the *"RESUME"* switch until the desired speed is obtained. Releasing the *"RESUME"* switch will set the new higher speed.

2. Depress accelerator pedal until the desired speed is obtained, then press and release the *"SET"* switch.

NOTE: When driving with cruise control in use, the speed may be increased for passing, etc., by depressing the accelerator in the usual manner. Once the foot is removed from the accelerator pedal, the cruise control will return to the previous set speed.

Decreasing set speed

Vehicle speed setting may be decreased by one of the following methods:

1. Press and hold the *"SET"* switch until the desired lower speed is obtained. Releasing the *"SET"* switch will set the new speed.

2. The cruise control can be disengaged without losing the speed memory by either of two methods:

a) Lightly apply the brakes

b) Momentarily press the *"DECEL"* switch button.

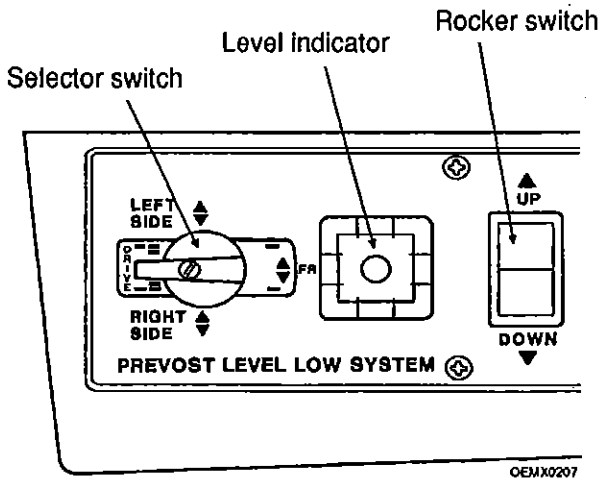
After either of these disengagements, you may return to the previously set speed by pressing and releasing the *"RESUME"* switch, provided the speed is higher than 35 m.p.h. (55 km/h).

The cruise control is completely shut off and the speed memory is lost by turning off the *"CRUISE"* rocker switch.

NOTE: If speed drops below 35 m.p.h. (55 km/h), the setting instructions must be repeated, because the cruise control is inoperative below this speed.

When the cruise control automatic operation is cancelled, any objectionable vehicle motion can be minimized by depressing accelerator lightly before disengaging cruise control.

Level low system controls



During driving, the conventional air levelling system of the vehicle controls the height at three points, the front, the left rear and the right rear. Your vehicle is equipped with a suspension system that consists of air springs (pressurized air bellows) located near each wheel. The amount of air in each air spring (and thus the vehicle height) is controlled by automatic levelling valves that operate between the chassis and the axles of the vehicle.

The three (3) levelling valves are located as follows: one at the front which controls the amount of air in both front air springs, one at the left rear which controls the left rear corner of the vehicle and one at the right rear which controls the right rear corner of the vehicle. During normal driving, these valves work automatically to maintain the chassis at the proper level above the axles, no matter the road condition or the vehicle weight.

When parked, and **ONLY** when parked, the level of the vehicle can be manually adjusted within the range of travel of the air springs. Thus, if the vehicle is parked on uneven ground, the manual override levelling system can be used to level the chassis of the vehicle. With the ignition *"ON"* (engine running or not), turn the selector knob (located in driver's compartment on side control panel) to the section of the vehicle which should be raised or lowered, then press the rocker switch accordingly to inflate or deflate the selected set of air springs. The front position raises or lowers the front only and does not tilt the vehicle to the right or left. Each rear position raises or lowers its respective side of the rear. Therefore, the rear positions can be used to tilt the vehicle to one side or the other, or they can be used to raise or lower the rear of the vehicle. If you wish to raise vehicle further, it is often necessary to run the engine in order to supply adequate air.

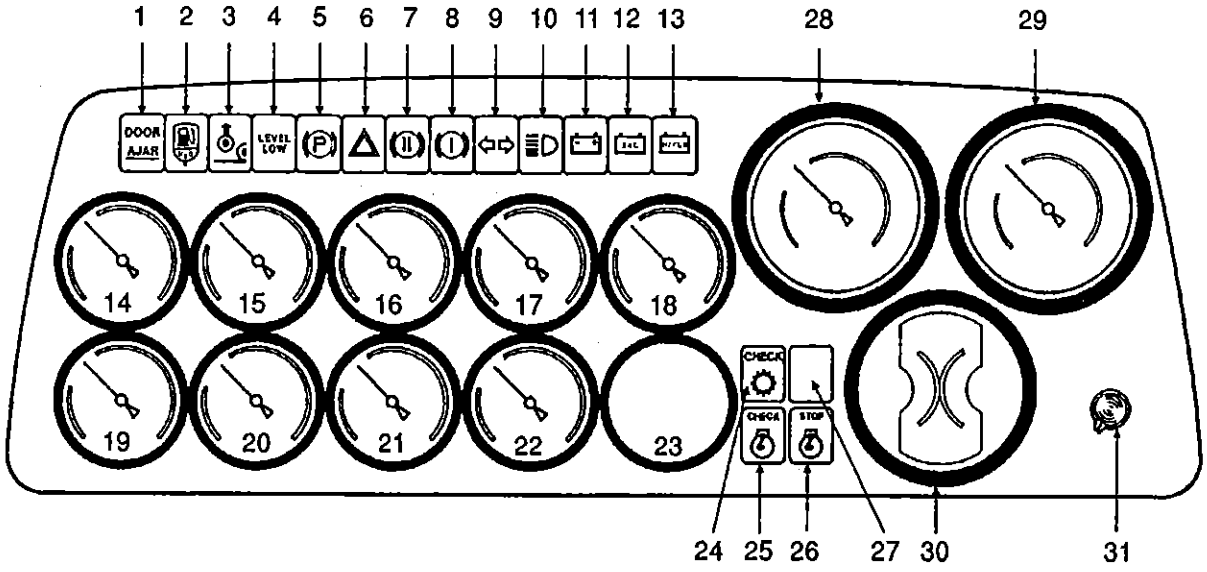
NOTE: It is best to level the rear (right to left) first before raising of lowering the front. After adjusting the rear, watch the level as you adjust the front. If the level shows that the vehicle is starting to tilt to right or left, then stop adjusting the front as the front has come to the end of its travel in one of the air springs.

After manual levelling, turn off the engine and turn selector knob to the *"DRIVE"* position. The vehicle will stay in the levelled position (the air is *"locked"* in air springs) as long as there are no air leaks. The vehicle will hold this position for several days. When engine is restarted and adequate air pressure has resumed, the vehicle will automatically level for driving conditions.

WARNING: Do not drive the vehicle with the level low selector switch in any position except *"DRIVE"*, as this may render the vehicle unsafe and cause loss of control. The flashing *"LEVEL LOW"* warning light in dashboard will remind you that the selector is not in the *"DRIVE"* position.

NOTE: If, for any reason, you wish to start the engine without moving vehicle (to warm up engine for instance) while keeping the vehicle in the manually levelled position, place selector switch in any position except *"DRIVE"*. When ignition switch is turned to the *"OFF"* position, reset the selector switch to the *"DRIVE"* position.

Dashboard



1. Door ajar
2. Water separator
3. Tag axle
4. Level low
5. Parking brake
6. Hazard
7. Low secondary air pressure
8. Low primary air pressure
9. Turn signal
10. High beams
11. Battery
12. Battery balance
13. High or low battery voltage
14. Secondary air pressure gauge
15. Engine coolant temperature gauge
16. Oil pressure gauge
17. Transmission oil temperature gauge
18. Turbo boost pressure gauge
19. Primary air pressure gauge
20. Fuel gauge
21. Voltmeter
22. Differential oil temperature gauge
23. Blank for additional instrument
24. Check transmission
25. Check engine
26. Stop engine
27. Blank for additional indicator/warning light
28. Speedometer-odometer
29. Tachometer
30. Pyrometer gauge
31. Instrument & switch brightness control

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Indicator/warning lights and instruments

1. Door ajar

This indicator is provided on vehicles equipped with a central door, and will light only when this door is ajar.

2. Water separator

Lights when the quantity of water accumulated in the diesel fuel filter/water separator must be drained (see page 6-4).

3. Tag axle

Lights when tag axle wheels are raised. Furthermore, a beep will sound to advise the driver that the wheels are raised.

4. Level low

Flashes when vehicle manual levelling system is operating (see page 2-7).

5. Parking brake

Lights when parking brake is applied (see page 2-14).

6. Hazard

Flashes when hazard switch is turned on.

7. Low secondary air pressure

Lights when air pressure in secondary system is too low.

8. Low primary air pressure

Lights when air pressure in primary system is too low.

9. Turn signal

Flashes when left or right turn signal is selected with multifunction lever. One light serves for both directions.

10. High beams

Lights when headlight high beams are selected (see page 2-13).

11. Battery

Lights when alternator is not operating properly.

12. Battery balance

Lights when batteries are out of balance.

NOTE: Before seeking assistance, check that the 12 volt main battery disconnect switch is set to the *"ON"* position, that the demand for the 12 volt power is not exceeding rated amperage output of battery equalizer(s), then finally check circuit breaker on battery equalizer(s) (for location, refer to page 2-20). Allow at least 15 minutes to balance batteries after corrective measure has been taken.

13. High or low battery voltage

Lights when battery voltage exceeds 30 volts or drops below 24 volts.

14. Secondary air pressure gauge

Indicates air pressure in the secondary system. Normal reading varies from 95 to 125 psi (655 to 860 kPa).

15. Engine coolant temperature gauge

Indicates engine coolant temperature. Normal reading should vary from 170 to 195 °F (76 to 90 °C).

NOTE: Engine is not considered *"overheating"* until above 215 °F (102 °C).

16. Oil pressure gauge

Indicates engine oil pressure. Normal reading at operating temperature should vary from 50 to 70 psi (345 to 483 kPa) at cruising speed.

17. Transmission oil temperature gauge

Indicates transmission oil temperature. Normal reading can vary from 160 to 250 °F (70 to 120 °C).

18. Turbo boost pressure gauge

Indicates turbo boost pressure in psi. Reading depends on engine rpm and load conditions.

19. Primary air pressure gauge

Indicates air pressure in the primary system. Normal reading varies from 95 to 125 psi (655 to 860 kPa).

20. Fuel gauge

Indicates the amount of fuel remaining in the fuel tank. If an auxiliary tank is installed, the fuel gauge shows the level in both tanks as the tanks are interconnected.

CAUTION: Operating the vehicle when the reading is below 1/8 full is not recommended.

21. Voltmeter

Indicates electrical system voltage. With engine operating, normal reading should be 27.5 volts.

22. Differential oil temperature gauge

Indicates differential oil temperature. Normal reading should not exceed 250 °F (120 °C).

23. Blank for additional instrument

24. Check transmission

Will light if a malfunction develops in the transmission. Furthermore, this indicator flashes when the *"ATEC"* test switch located in the upper section of steering compartment is *"ON"* to indicate transmission malfunction codes (see page 5-6).

NOTE: As a light bulb check and system check, this indicator will turn on with the ignition switch *"ON"*. After about two seconds the light will turn off. If this indicator remains on, the self-diagnostic system has detected a problem.

If the problem disappears, the light will go out, but a trouble code will remain stored in the ECU.

25. Check engine

Will light if a minor engine malfunction is sensed by the DDEC system. This light will remain illuminated until malfunction is corrected. Furthermore, this indicator flashes to indicate engine malfunction codes when the required procedure outlined in page 5-5 has been performed.

NOTE: As a light bulb check and system check, this indicator will turn on with the ignition switch *"ON"*. After about five seconds the light will turn off.

26. Stop engine

Will light when major engine problem occurs. The engine power will automatically begin to decrease gradually and will be followed by an automatic shutdown after 30 seconds. This 30 second delay period may be repeated using the *"Stop Engine Override Switch"* outlined further on this page.

NOTE: Once engine is stopped, it can not restart until malfunction is corrected.

As a light bulb check and system check, this indicator will turn on with the ignition switch *"ON"*. After about five seconds the light will turn off.

27. Blank for additional indicator/warning light

28. Speedometer-odometer

The speedometer indicates the vehicle speed. The odometer indicates the distance driven.

U.S. models: Miles

Canadian models: Kilometers

29. Tachometer

Indicates engine speed in hundreds of revolutions per minute (rpm) and serves as a guide for proper gear shifting. It also aids the driver in preventing excessive engine speeds when going down steep grades, with engine serving as a brake. Maximum allowable engine rpm is 2450.

30. Pyrometer gauge

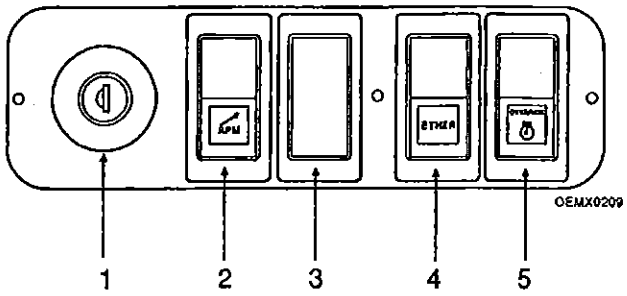
Indicates left and right exhaust manifold temperature in hundreds of °F. Normal reading should vary between 500 and 1100 °F according to operating conditions. Temperature should not exceed 1100 °F.

31. Instrument & switch brightness control

Adjust as required. Brightness is progressively dimmed as control knob is further rotated in clockwise direction.

NOTE: Dashboard panel gauges show approximate readings and should not be relied upon for mechanical adjustments.

L.H. lower switch panel



Switches

1. Ignition

Ignition switch has three positions:

"OFF": No ignition and key can be removed.

"ON": Ignition is on and key cannot be removed.

"START": Starting position. Spring-loaded ignition switch returns to *"ON"* position after starting. Ignition key must be returned to *"OFF"* position before trying to restart.

2. Fast Idle

Push down rocker switch to engage fast idle, thus increasing engine speed to approximately 1100 rpm.

NOTE: If engine is stopped with the fast idle switch in the *"ON"* position, this control will be automatically cancelled when restarting the engine; the driver must depress, then reset the rocker switch to actuate fast idle again. Generally, fast idle should be reduced to low idle before shutting off engine.

3. Blank for additional switch

4. Ether cold starting aid

Activates ether cold starting device in engine compartment (see *"Cold weather starting"* page 4-4).

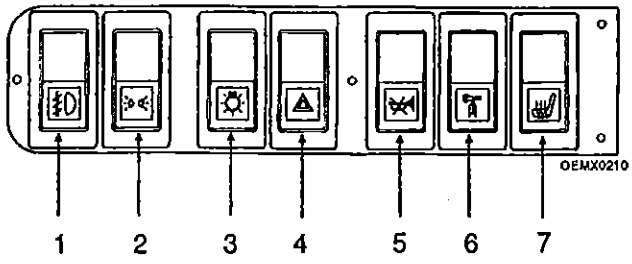
5. *"Stop Engine"* override

Push down rocker switch to reset the 30 second delay period and the shutdown procedure. This switch can be repeatedly depressed, **i.e. one (1) pulse is sufficient for each 30 second period**, for engine power in an emergency situation.

NOTE: The stop engine override switch will be operative only if it has been depressed before the end of the 30 second delay period.

CAUTION: The *"Stop Engine"* override must be used only in emergency cases to bring vehicle to a safe stop. Excessive use of this switch could cause serious damage to the engine.

R.H. lower switch panel



Switches

1. Fog lights

Push down rocker switch to activate fog lights as well as clearance and marker lights. Before using fog lights, remove protective covers by pulling on their edges.

WARNING: Make sure engine is stopped and parking brake applied.

2. Marker lights

Push down rocker switch to activate marker lights as well as clearance lights.

3. Headlights

Push down rocker switch to activate headlights as well as clearance and marker lights.

NOTE: This vehicle is provided with a day time running light system. For information, refer to section *"Safety"* under heading *"Day time running lights".*

4. Hazard flashers

Push down rocker switch and all turn signal lights will flash simultaneously. Hazard and turn signal indicator lights in dashboard will also flash.

5. Back-up alarm cancel

Push down rocker switch to cancel alarm during back-up maneuvers in special situations (e.g.: parking in campground after curfew).

WARNING: Use this switch only in special situations as the alarm is designed primarily to warn nearby persons of a backing vehicle. Be sure to return rocker switch to normal position after use.

6. Air-operated door lock

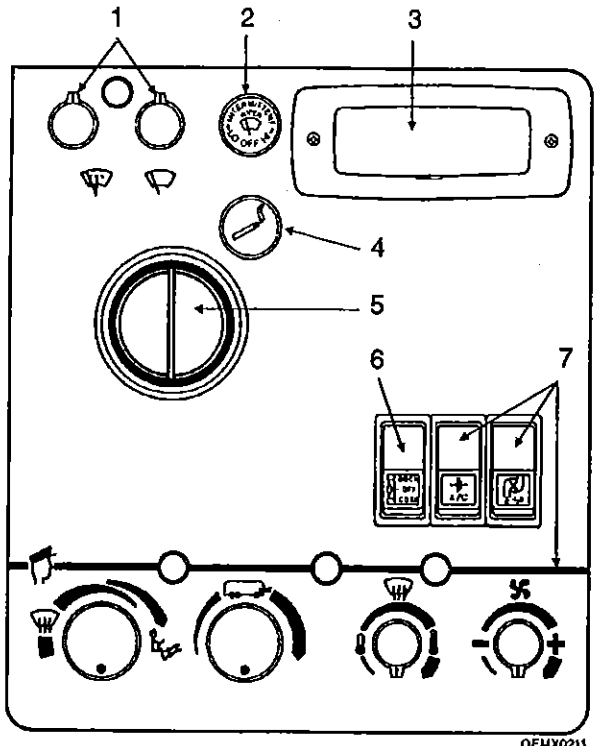
Push down rocker switch to lock the entrance door mechanism and push up to unlock.

CAUTION: Do not operate switch when the door is open.

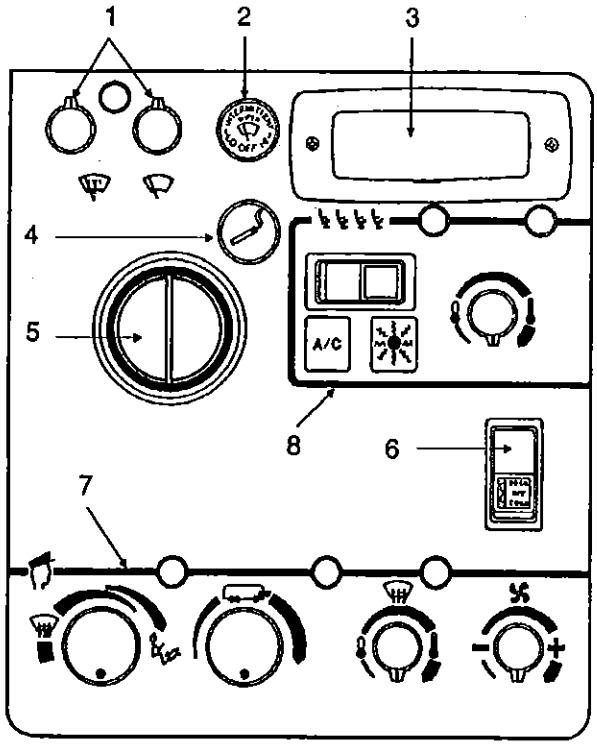
7. Driver's seat heating

Push down rocker switch to activate heating element inside driver's seat cushions.

R.H. console



Without central A/C - heating system



With central A/C - heating system

1. Right and left windshield wiper controls

Turn knobs clockwise and set wipers to the desired speed.

To activate both windshield washers, press and momentarily hold the left knob (see page 4-11).

CAUTION: Do not run wiper blades on dry windshields as this may scratch them and/or damage blades.

WARNING: In cold weather, windshields should first be warmed up with defroster before using washers, in order to prevent icing and serious visibility impairment.

2. Windshield wiper intermittent control

Turn control clockwise to actuate intermittent mode. Turn further clockwise to increase time delay.

NOTE: The intermittent mode is operative only when at least one wiper control is turned *"ON"*.

When intermittent mode is no longer desired, turn counterclockwise until knob clicks in the full *"OFF"* position.

3. Ashtray

4. Cigarette lighter (12 volts)

Push in to activate and the lighter will pop out when ready for use. Return lighter to initial (non-activated) position.

5. Adjustable louver

The louver is manually adjustable, so the heated or cooled air flow can be directed as desired.

NOTE: An additional adjustable louver is located on side control panel to the left of the driver to defrost side window. A third adjustable louver is located at extreme right of dashboard and can be used to concentrate warm air on windshield area used to view exterior R.H. side mirror.

6. Docking and cornering lamp switch

Push up rocker switch to activate simultaneously the four (4) docking lamps.

Push down rocker switch to actuate cornering lamps. When selecting left or right turn signal, the corresponding cornering lamp will illuminate to increase lateral visibility (see page 3-3).

NOTE: When the rocker switch is set to the center position, the docking and cornering lamps will stay *"OFF"* at all times.

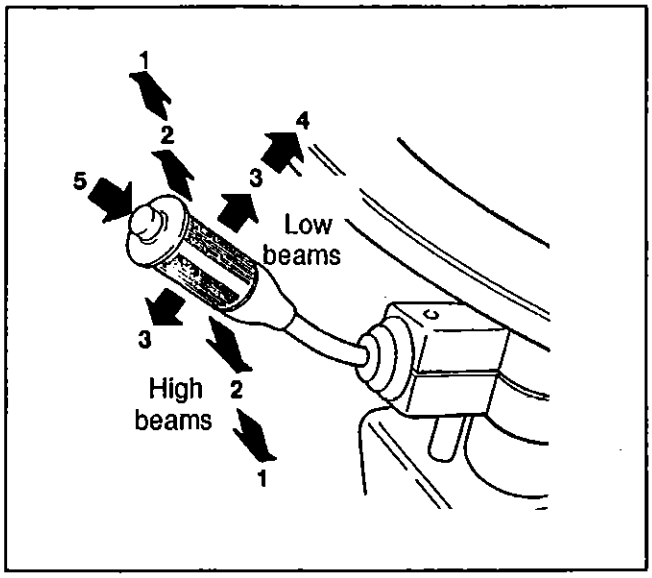
7. Driver's A/C - heating system controls

These controls are used to obtain desired temperature in driver's compartment (see page 4-8).

8. Central A/C - heating system controls

These controls are used to obtain desired temperature inside vehicle (see page 4-9).

STEERING COLUMN CONTROLS



OEMX0213

A. The *"Multifunction lever"* is used to operate the following accessories:

1. Turn signal

Move the lever up to the second stop to signal a right turn, and down to the second stop to signal a left turn. When the turn is completed, the signal will cancel and lever will automatically return to its initial position.

2. Lane change signal

Move the lever up or down, part way to the first stop, and hold it there. The lever will return to its initial position when released.

3. Headlight dimmer

High beams or low beams can be selected by respectively pushing the lever towards the dashboard or by pulling it towards the driver.

4. Headlight flasher

High beams can be flashed momentarily by pulling the lever completely towards the driver and then releasing it.

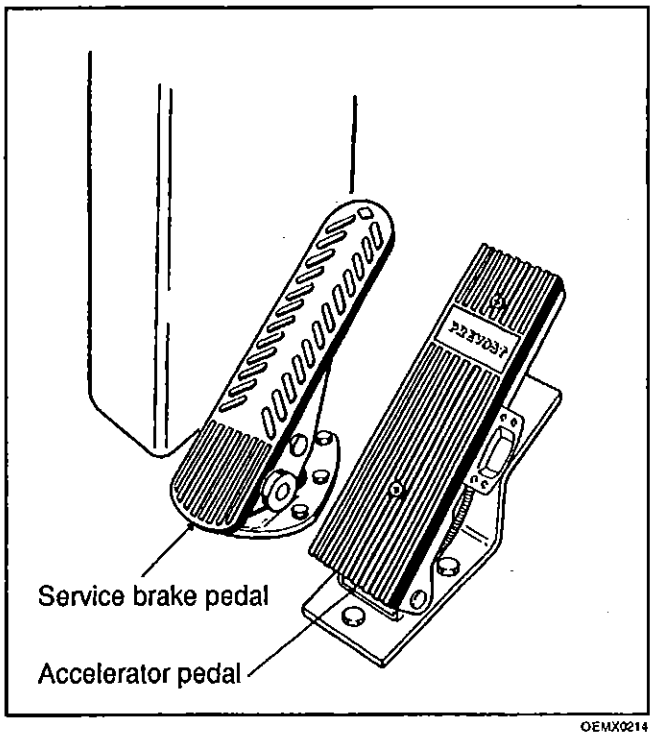
5. Courtesy-type blinkers

Blinkers can be operated by pressing the button located at the tip of lever.

B. Electric horn

Can be activated by pressing button in center of steering wheel.

FOOT-OPERATED CONTROLS



OEMX0214

Brakes

Service brakes

This vehicle is equipped with a dual braking system, the front brakes being independent of the rear brakes. Normally both systems are activated by the single brake pedal. This brake system becomes a modulated emergency system if a pressure drop occurs in the rear brake system.

Service brakes are applied by depressing the brake pedal located immediately to the right of the steering column. The degree of foot pressure applied on pedal determines the extent of brake application. For best braking action, initial application should gradually be increased to the required rate of braking; foot pressure should then be gradually released as vehicle speed is reduced, so that only a slight pressure remains in the brake chambers when stop is completed. When brake pedal is depressed, vehicle stoplights automatically light up.

For safe brake effectiveness, vehicle air system pressure should reach at least 95 psi (655 kPa) in both primary and secondary air circuits.

The primary and secondary air circuits are provided each with a warning light in dashboard which will illuminate, and a buzzer which will sound when air pressure drops below 70 psi (483 kPa). Cause of pressure loss must be corrected before further operation.

WARNING: *"FANNING"* or *"PUMPING"* brake pedal is not recommended. This practice will not increase brake system effectiveness, but will instead waste air and cause unnecessary wear on brake parts. *"FANNING"* or *"PUMPING"* does not increase brake line pressure, but decreases both reservoir and line pressure and thereby reduces brake effectiveness.

***"RIDING"* the brake by resting foot on brake pedal when not braking can cause abnormally high brake temperatures, excessive lining wear, possible damage to the brake drums, and loss of brake efficiency.**

Combination emergency and parking brakes

In normal operation, if air pressure in both brake circuits drops below approximately 40 psi (276 kPa), spring-loaded emergency parking brakes will immediately be applied at full capacity to the drive axle to stop vehicle. In an extreme condition, the emergency brakes might be applied quite rapidly. The same brakes are used as parking brakes and actuated by a control knob located at the left of the driver's seat.

Spring-loaded parking brakes are applied by pulling up the control valve knob. They are not designed to be used as service brakes. In normal driving conditions, control valve knob must be pushed all the way down.

NOTE: Parking brakes can supplement service brakes to stop the vehicle in an emergency condition only. The stopping distance will be considerably longer than with a normal brake application.

Before releasing parking brakes by pushing down control valve knob, air pressure gauges should be checked to ensure that brake system air pressure has built up to a minimum of 95 psi (655 kPa).

WARNING: Always apply parking brake before leaving driver's seat.

NOTE: A beep will sound if ignition switch has been turned *"OFF"* without parking brake being applied. The same beep will sound if pressure is still applied on service brake pedal.

Each time the parking brake is applied and ignition key is turned or left to the *"ON"* position, the stoplights automatically ligth up.

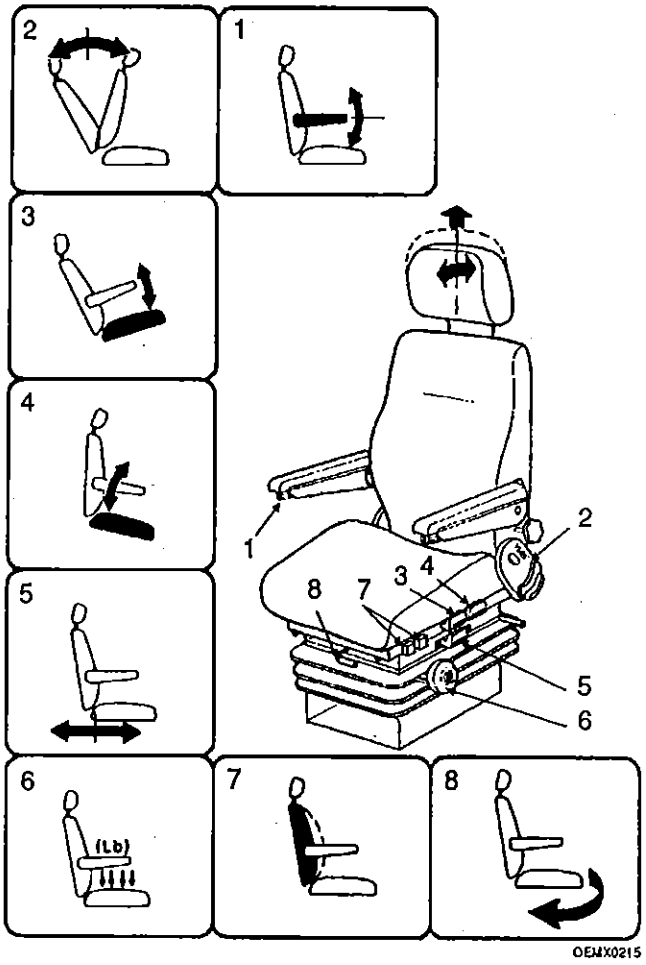
Accelerator pedal

Controls engine rpm.

SEATS

Driver's seat

The driver's *"delivery"* seat is standard and intended only for driving the vehicle for its initial delivery. It is a conventional van seat equipped with tracks for fore and aft adjustments. Two excellent *"ISRI"* driver's seats are optional: one with a mechanical suspension, and the other with a sophisticated air suspension. Seats can be adjusted to the most comfortable driving position as follows:



WARNING: Manual adjustment of seat should never be performed when driving vehicle to avoid unexpected changes that could result in loss of vehicle control.

1. Rotate control knob to select desired angle. Pivot up and parallel with backrest when not in use.

2. Lift lever to allow proper adjustment of the backrest angle.

3. Pull handle up, and push or pull on seat cushion to raise or lower the front section of the seat cushion.

4. Pull handle up, and push or pull on seat cushion to raise or lower the rear section of the seat cushion.

WARNING: Before proceeding with seat cushion adjustments, lower seat belt retractor to avoid pinching fingers between retractor and control knobs.

5. Pull handle up and slide seat forwards or backwards to adjust distance between driver and dashboard.

NOTE: This control may also be located at the front of the seat (lever no. 8).

6. Rotate handwheel until your body weight is selected on indicator for maximum suspension performance.

NOTE: On *"ISRI"* seat equipped with air suspension, the suspension is self-adjusting to the weight of the driver, thus deleting the suspension adjustment handwheel (6).

7. Push on upper section of rocker switches to inflate lumbar support bellows inside the seat backrest, and push on lower section of rocker switches to deflate bellows.

NOTE: Rear and front rocker switches are respectively for lower and upper lumbar support bellows.

8. Pull handle up to allow rotation of driver's seat.

NOTE: This control may also replace control #5 on some seat models.

Heated cushions

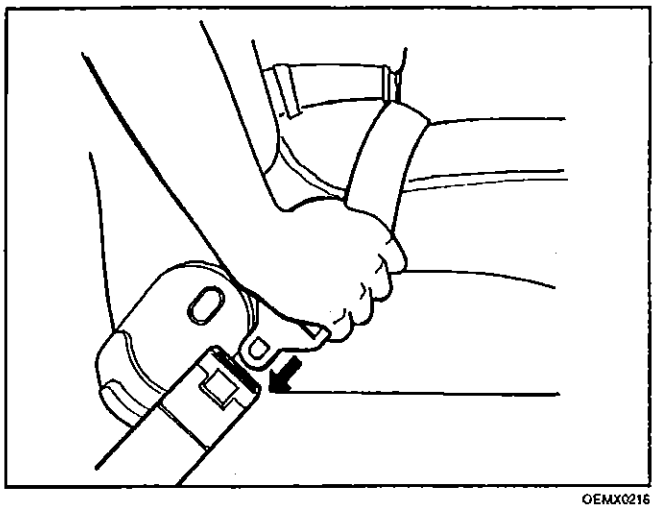
The *"ISRI"* seat may also be equipped with back and seat heated cushions, operated by a switch mounted on R.H. lower switch panel.

Copilot's seat

On vehicles so equipped, the driver's seat features apply to the copilot's seat. Refer to the instructions under heading *"Driver's seat"* for proper adjustment procedure.

Seat belts

Each seat is equipped with a retractable seat belt as required by State and Federal regulations. To fasten seat belt, pull it out of the retractor and insert the latch plate into the buckle until it clicks. No special adjustment is required as the reel device is self-adjusting. If seat belt operation becomes defective, report to maintenance personnel.



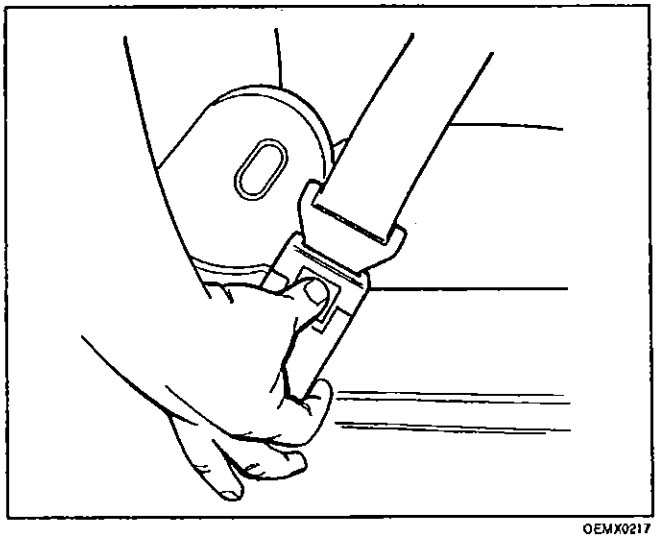
OEMX0216

NOTE: The seat belt must be pulled out slowly and continuously otherwise it will lock the reel before the latch plate reaches the buckle. If this happens, allow the belt to retract completely and repeat the procedure correctly.

WARNING: A snug fit with the lap belt positioned low on the hips is necessary to prevent the possibility of severe injuries in case of an accident. Also, belt should not be worn twisted; do not let belt or belt hardware become damaged by pinching it in seat mechanism. Do not wear belt over rigid or breakable objects in or on your clothing, such as eyeglasses, pens, keys, etc. as these may cause injuries.

CAUTION: Belt must not rub against sharp objects. Never bleach or dry clean safety belt.

To unfasten belt, press red button in center of buckle and allow belt to retract. If belt does not fully retract, pull it out and check for kinks or twists. Make sure that it remains untwisted as it retracts.



OEMX0217

WARNING: Many states and provinces require driver and front seat passengers (and sometimes other passengers) to wear seat belts in most types of vehicles.

EXTERIOR MIRRORS

Your vehicle is equipped with two exterior mirrors which can be provided with an optional electric heating system to minimize ice and condensation in extreme weather conditions. Integral thermostats are installed in both mirrors to avoid continual heating. Use the appropriate switch on the side control panel to activate the defroster system on both mirrors simultaneously.

The mirrors can be easily adjusted by observing the following method:

Mirror arm angle can be adjusted in order to obtain desired vehicle width. To adjust, loosen adjusting *"Allen"* screw (1) located at body end of mirror arm. Adjust mirror arm to the desired position, then tighten adjusting screw.

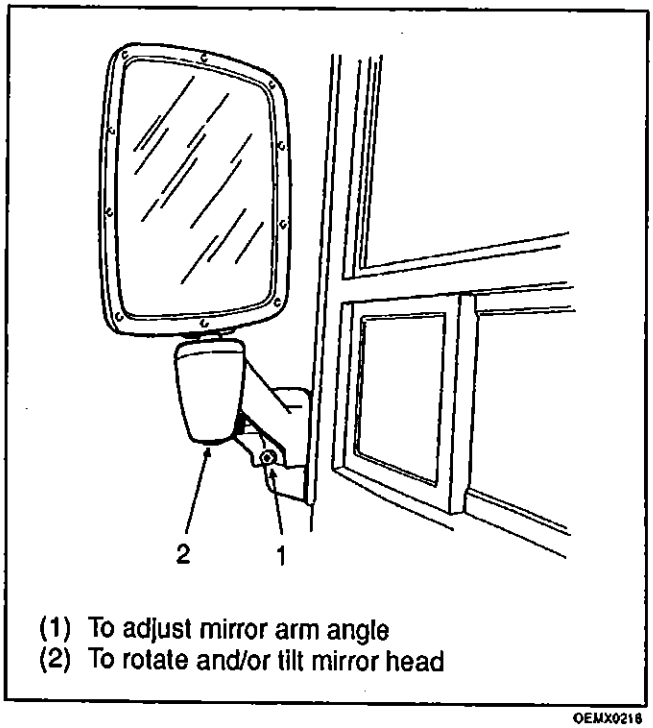
CAUTION: Do not overtighten.

Mirror head can be rotated and/or tilted by loosening the adjusting *"Allen"* screw (2) located at the base of the mirror head. Adjust to desired position, then tighten adjusting screw.

CAUTION: Do not overtighten.

NOTE: Adjust mirrors before driving and after adjusting your seat to the proper driving position. It is important for safe driving that you have good rear vision on each side of the vehicle.

CAUTION: Do not install a convex mirror on the heated mirror glass. This prevents even distribution of heat in the heated mirror and could cause the glass to break.



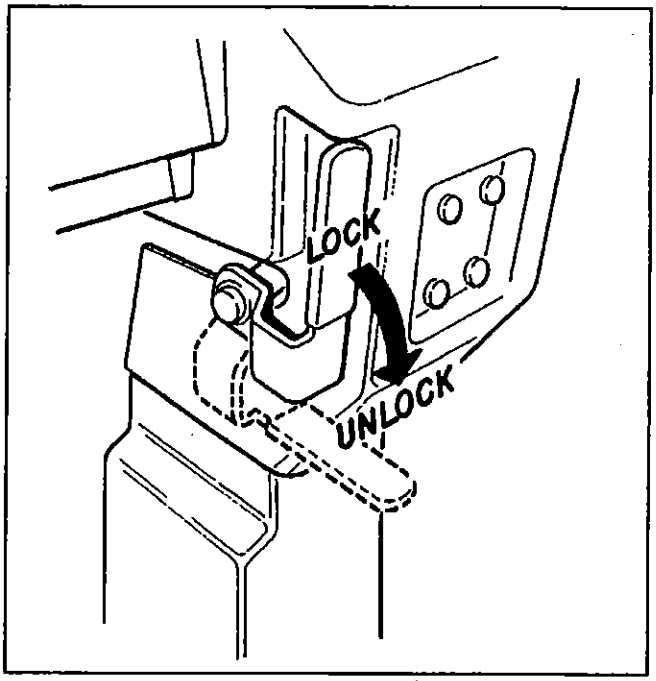
(1) To adjust mirror arm angle
(2) To rotate and/or tilt mirror head

OEMX0218

TILT STEERING WHEEL AND TELESCOPIC STEERING COLUMN

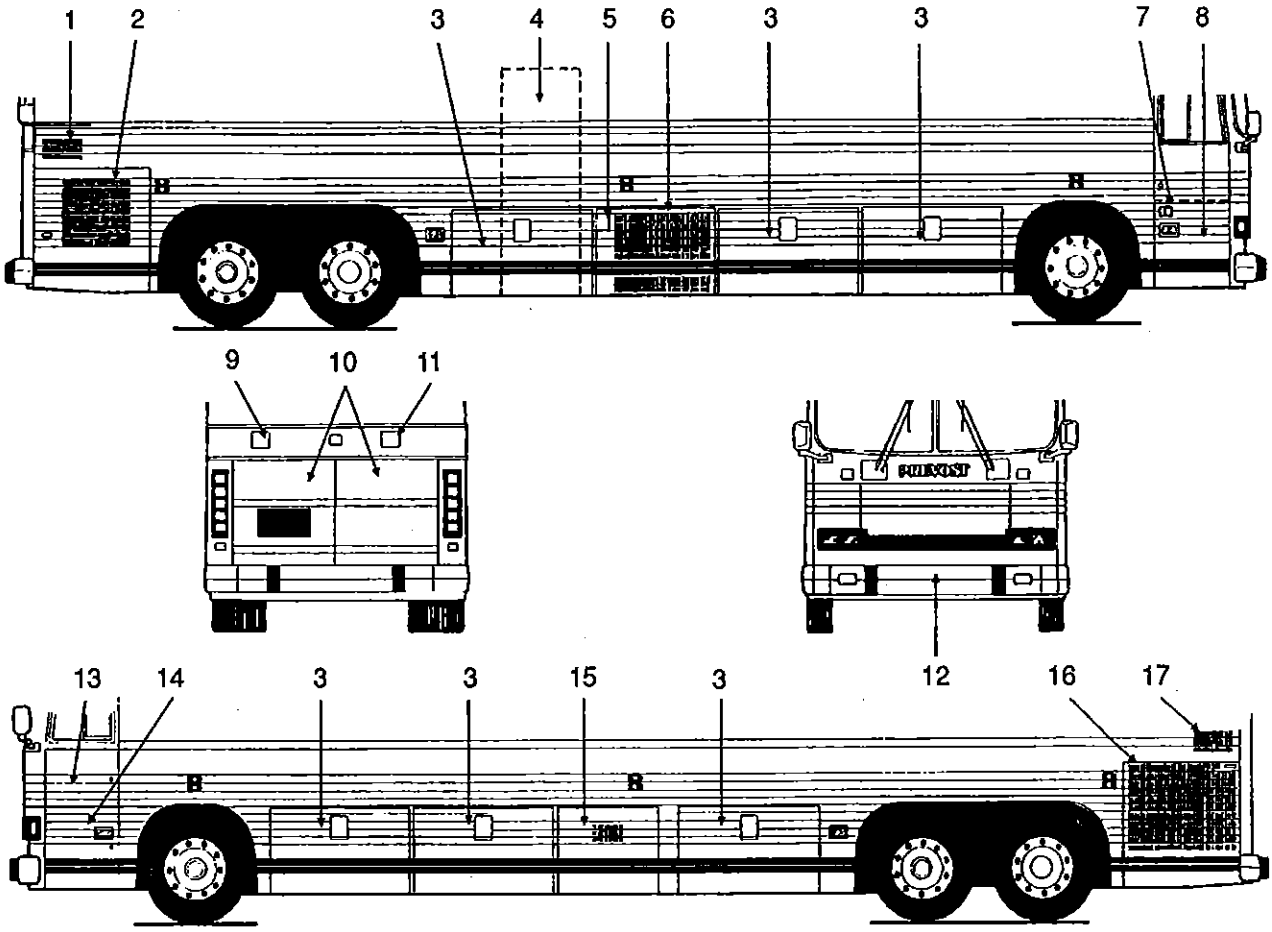
To unlock, use the handle located to the left of steering column. Pull handle down to permit a maximum variation of 11° in steering wheel angle, and a telescopic steering movement of 2" (5 cm). Push handle up to lock tilt and telescopic mechanism.

WARNING: Never try to adjust the mechanism while the vehicle is in motion. Steering may move unexpectedly and could cause sudden loss of vehicle control, thus resulting in possible vehicle crash, and personal injuries for you and your passengers.



OEMX0219

EXTERIOR COMPARTMENTS



1. Engine air intake duct
2. Engine R.H. side door
3. Baggage compartment
4. Central door (optional)
5. Fuel tank filling door
6. Condenser compartment
7. Front entrance door
8. Right front storage compartment *
9. Coolant surge tank filling door
10. Engine rear doors
11. Engine oil reserve tank filling (block heater plug)
12. Reclining bumper compartment
13. Front electrical compartment
14. Steering compartment
15. A/C & heating compartment
16. Engine L.H. side door
17. Engine air intake duct

* Option only on vehicles equipped with a central door and no front entrance door.

OEMX0220

The above figure identifies all compartment and access doors. This section will explain how to open and close main doors.

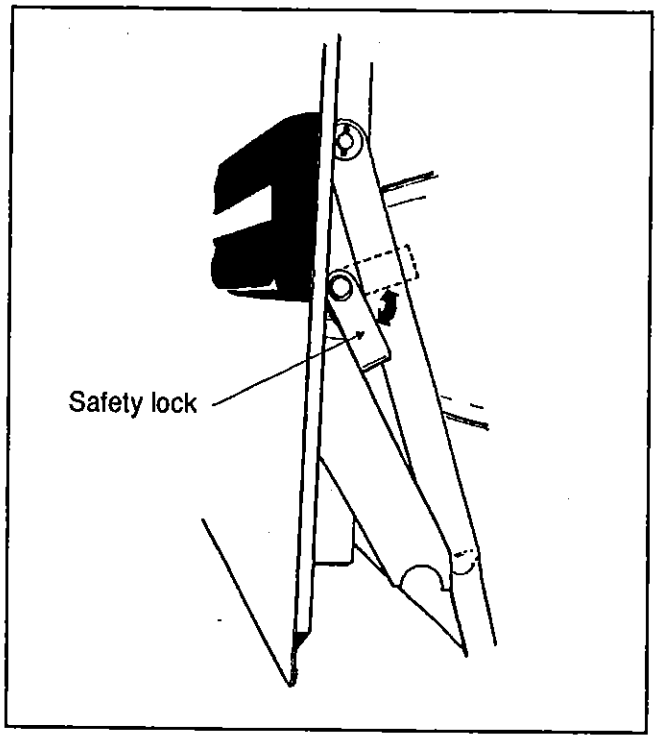
NOTE: When the door is provided with a lock, refer to page 2-1 to select the appropriate key.

Baggage compartments

To open a baggage compartment door, insert fingers under lower edge of operating handle, pull out and up to unlatch door, grab handle rod and pull up compartment door. The opening action is assisted by gas cylinders which also hold the door in the open position.

Opening of baggage compartment door will actuate a microswitch that will illuminate the compartment lights (if vehicle is so equipped).

NOTE: In case of malfunction or special conditions, use the safety lock to keep the door securely opened.



OEMX0221

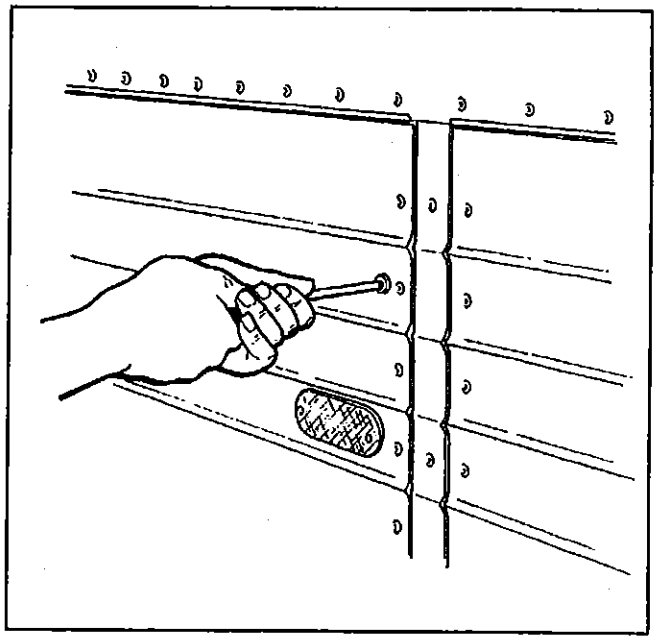
To close a baggage compartment door, first release safety lock, then pull handle rod out and down as far as door will allow and push down handle to complete procedure and latch door.

CAUTION: Do not slam baggage compartment doors. This can only damage door weatherstrip and/or locking mechanism.

WARNING: Always open and close baggage compartment doors using the handle rod ONLY. Keep hands off all door edges.

A/C & heating and condenser compartment doors

The A/C & heating and condenser compartment doors can be opened by removing the *"Philipps"* retaining screws and then pulling on the door.



OEMX0222

Reclining bumper compartment

The "reclining-type" front bumper can be opened for maintenance purpose; carefully remove the large bolt at each end using the wheel nut wrench, then lower the bumper slowly as it is quite heavy.

WARNING: This compartment has not been designed for storage. Never leave any loose object in this area as it may interfere with steering linkage mechanism.

CAUTION: The two bumper retaining bolts should be checked to make sure they are firmly tightened after compartment panel has been closed.

Service doors

The doors #9, 11, 13, and 14 can be opened by turning the slotted head *"Dzus"* fasteners 1/4 turn counterclockwise and then pulling on the door.

Doors #13 and #14 are provided each with a microswitch which when actuated, will illuminate the compartment light.

CAUTION: Special care must be taken not to damage the paint around the *"Dzus"* fasteners when using a screwdriver or a coin.

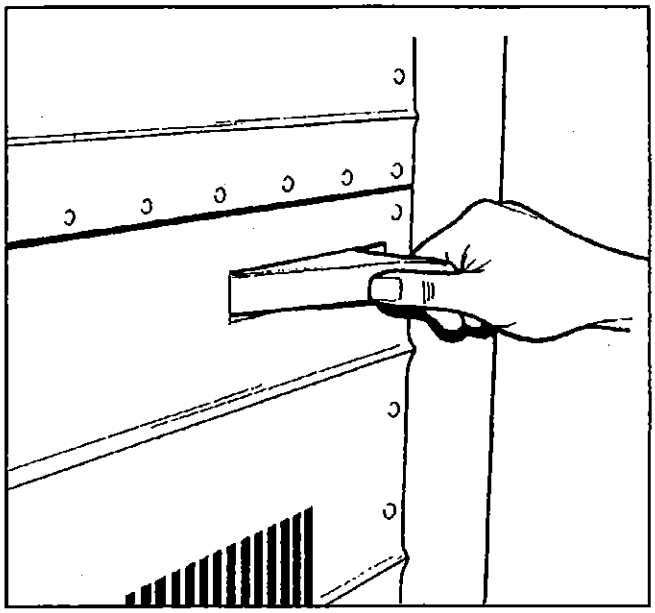
Engine compartment

For access to the engine compartment, two rear doors and one R.H. side door are provided. To open rear doors, turn lock release handle counterclockwise and pull open doors. Doors are held in open position by a mechanical locking device located at top of each door. A switch located on R.H. side of rear junction box can be used to actuate the engine compartment lights.

To close doors, first release mechanical locking device by pushing it with fingers, then push doors back to closed position, always starting with left (driver's side) door.

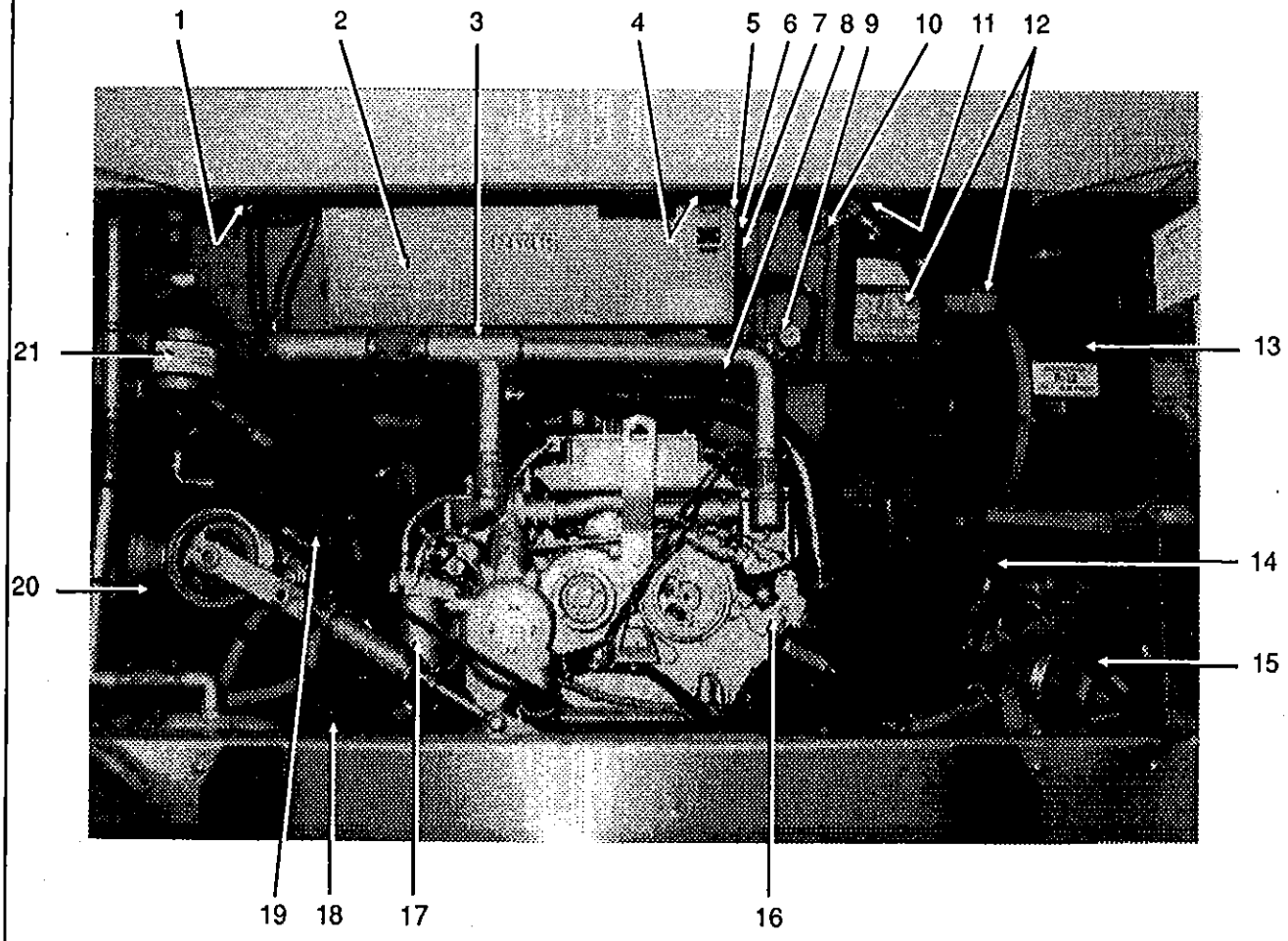
The side door can be opened by pulling the release handle and then pulling on the door.

NOTE: An engine L.H. side compartment door, which opens similarly to the R.H. side compartment door, is designed to provide access to the radiator, and if vehicle is so equipped, to the shutter, condenser, and central heating system manual valves.



OEMX022J

Engine compartment components



Component identification:

1. Coolant surge tank
2. Rear junction box
3. Transmission oil dipstick
4. Belt tensioner cylinder two-way control valve
5. Engine compartment light switch
6. Starter selector switch; "REAR", "OFF" or "NORMAL" position
7. Rear start push button switch
8. Cold weather starting fluid cup
9. Engine oil pressure gauge
10. Engine oil temperature gauge
11. Engine oil reserve tank
12. Battery equalizers ("Vanner")
13. Engine air cleaner
14. Engine primary fuel filter
15. A/C compressor (central system)
16. Engine oil dipstick
17. Engine secondary fuel filter
18. Muffler
19. Radiator fan gearbox
20. Radiator
21. Power steering oil tank

OEMX0224

ACCESSORIES

Ashtray

Push slightly on L.H. side to open it. To remove, press on tab located inside ashtray.

WARNING: Never use the ashtray as a waste paper receptacle as it could cause fire.

Cigarette lighter

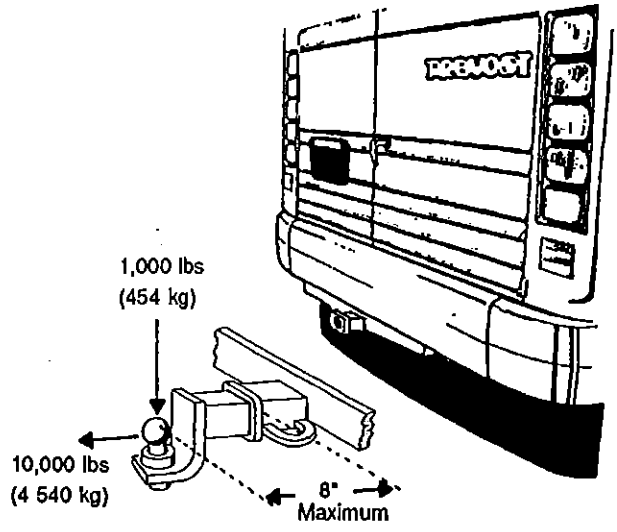
Push in to activate, and the lighter will pop out when ready for use. Return lighter to initial (non-activated) position.

The socket of the cigarette lighter may be used for 12 volt appliances with a maximum consumption of 10 amps, such as a hand spotlight, small vacuum cleaner, etc. Make sure the socket will not be damaged by appliances equipped with unsuitable plugs.

NOTE: Cigarette lighter and socket remain functional even after the ignition key is removed.

Trailer hitch

Your vehicle may be equipped with a trailer hitch installed at the factory. This trailer hitch has been designed to meet SAE class 4 specifications.



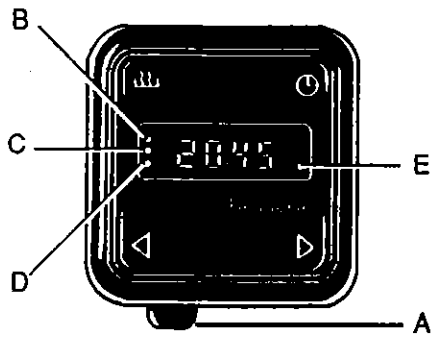
- Maximum gross trailer weight: 10,000 lbs (4 540 kg)
- Maximum tongue weight at 8 inches or less from coupling receiver: 1,000 lbs (454 kg)

OEMX0225

WARNING: Pulling a trailer weighing more than the recommended maximum gross weight may cause engine and transmission overheating, and also failure of the hitch, which can result in an accident and serious injuries.

NOTE: Pulling a trailer over long distances is considered as *"severe operating condition"* for the vehicle and requires more frequent service intervals of the power plant.

WATER HEATER TIMER



OE360205

This timer located on L.H. side control panel is used to program the starting and stopping time of the preheating system.

CAUTION: The preheating system should not operate for more than one hour before starting the engine as this could discharge batteries.

Time display

Pull lever A forward*

Time setting

Pull lever A forward and press on ◁ or on ▷

Heating startup

(possible regardless of preselection)

Press on

Display of heating time in minutes, operation indicator light E is flashing

Heating startup, continuous operation

Pull lever A forward and press simultaneously on

Heating shutoff

Press on . With automatic delay to allow cooling

Preselection of heating startup time

Memorization of 3 startup times

Display of memorized times

(heating will turn on automatically at preselected time)

Press once on : Heating is set for the 1st startup time**, indicator light B is on.

Press twice on : Heating is set for the 2nd startup time**, indicator light C is on.

Press three times on : Heating is set for the 3rd startup time**, indicator light D is on.

Neutral position: Press four times on : No display or display of time*. No preselected startup time

Setting of startup times**:

1st memory: Press momentarily on B is on

2nd memory: Press momentarily on C is on

3rd memory: Press momentarily on D is on

Setting of startup time by pressing on ◁ or ▷

Neutral position: press once again on :

No display or display of time*, the preset times are still in memory

* Eventually permanent display of time with the vehicle ignition switch on

** Display of heating startup time turns out after approximately 20 seconds, or time display*

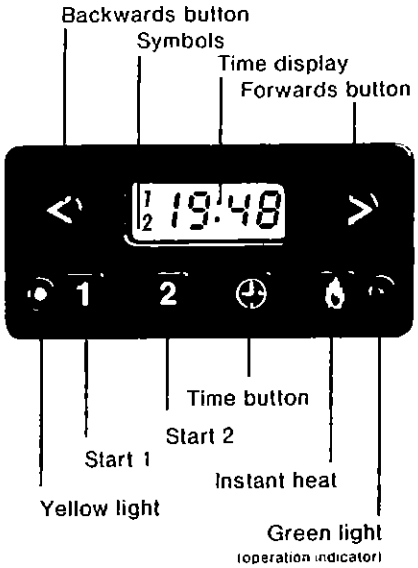
WARNING: Preheating system must not operate when vehicle is parked inside or during fuel fill stops.

NOTE: Preheating system uses the same fuel as the engine.

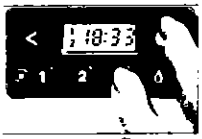
In case of failure:

1. Shut off and turn on heating.
2. Check main circuit breaker and overheating switch.
3. Have it repaired in a specialized shop.

Operation with digital timer



1. To set the clock ...

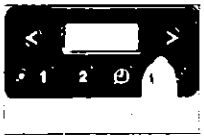


if the time display – e.g. 18:33 – is wrong, or if it flashes 8:88, press button ⏲ and at the same time press either ‹ (backwards) or › (forwards). The longer you hold the button down, the quicker the display changes. The last few minutes are set accurately by quick pushes. Adjust to get exact time, e.g. 19:48. The display fades after 20 secs.

2. Do you want to know the time?

Just press button ⏲ at any time. The display appears again.

3. You can get instant heat ...



with the button ⏻, which switches your heater on (or off) immediately. The green light is on while the heater is switched on.

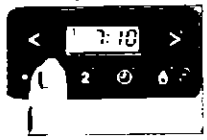
4. ... or you can programme the heater to come on up to 24 hours ahead.

Press button 1 – and the display shows the time at which the heater will start. You can alter starting time by pressing button ‹ (backwards) or › (forwards).
The longer you press the button, the faster the display changes. The last few minutes are set accurately by quick pushes.
The display fades after 20 secs. The symbol 1 remains in the display, and the yellow light stays on. Your starting time is now activated.

5. Button 2 allows you to programme a second starting time

Press button 2, which de-activates starting time 1. Then proceed as in (4).
The activation of the second starting time is indicated by the symbol 2.

6. Do you want to check (or activate) your starting time?



Press button 1 or 2 briefly. The display shows, for 20 secs., the programmed starting time. This activates the timer to start the heater at the time shown.

7. Do you want to cancel a programmed start?

Press button 1 or 2 briefly. The appropriate number in the display goes out, together with the yellow light.

ENGINE BRAKE SYSTEM (JACOBS)

The *"Jacobs brake"* is a diesel engine retarder that uses the engine itself to aid in slowing and controlling the vehicle. When activated, the *"Jacobs brake"* alters the operation of the engine's exhaust valves so that the engine works as a power-absorbing air compressor. This provides a retarding action to the wheels.

The engine brake is a vehicle-slowing device, not a vehicle-stopping device. It is not a substitute for the service braking system. The vehicle's service brakes must be used to bring the vehicle to a complete stop.

Effectiveness of the engine brake system will vary according to transmission gear in use. The engine brake system is more effective in lower gears and at higher engine speeds.

WARNING: When descending significant grades, use service brakes as little as possible. If engine does not slow vehicle to a safe speed, apply service brakes and shift to a lower gear. Let the engine (and engine brake) retard the vehicle. Keep brakes cool and ready for emergency stopping.

NOTE: Each time the engine brake system is in operation, the stoplights will automatically light up.

AIR SYSTEM EMERGENCY FILL VALVE

This vehicle is equipped with two air system emergency fill valves to supplement the air system when air pressure is low and engine cannot be operated. One of these valves is located over batteries in engine compartment and accessible by the engine R.H. side access door. The other is located in the steering compartment over the accessory air tank. These two air system emergency fill locations are fitted with the same valve stems as standard tires, and can be filled by any standard external air supply line.

The air system emergency fill valve mounted in engine compartment will supply air for all systems (brakes, suspension and accessories) while the steering compartment fill valve will supply air for accessories only.

CAUTION: Air filled through these two points will pass through the standard air filtering system provided by Prévost. Do not fill air through any other points.

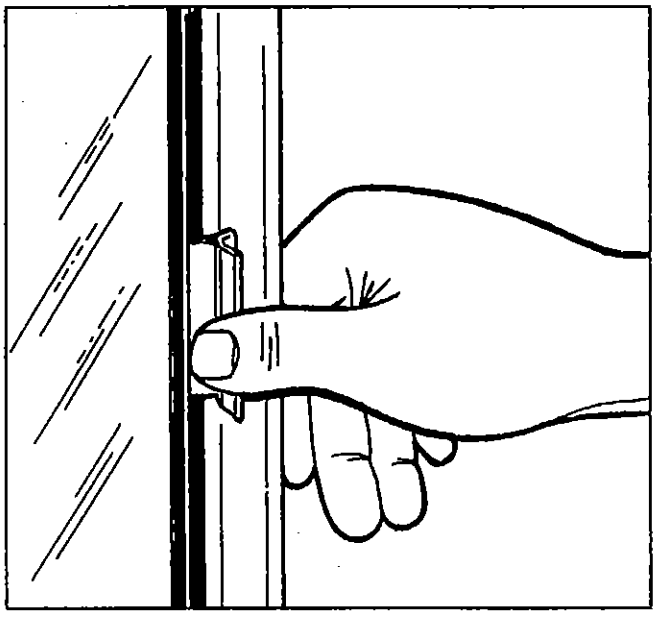
BACK-UP ALARM

The back-up alarm alerts people close to the vehicle that it will be moving in reverse range. Driver should take extra precautions when backing up. If in doubt, ask someone to guide you.

EMERGENCY EXITS

Sliding-type emergency escape window

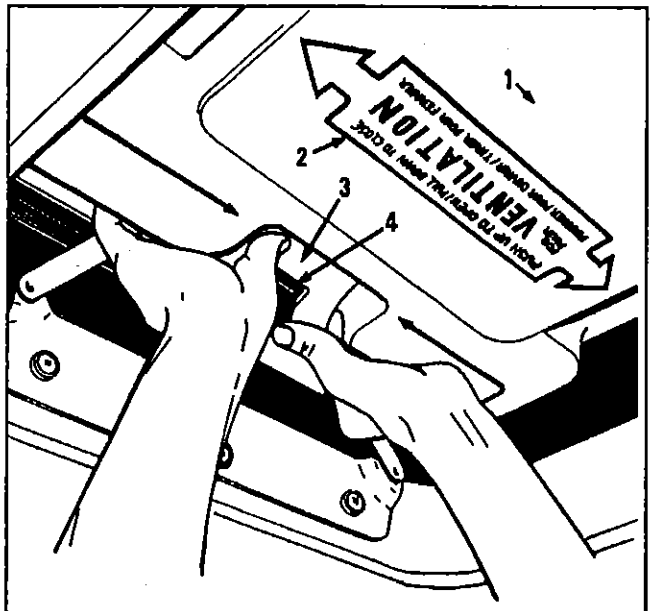
Unlatch sliding window, open it completely, then slide the screen fully open to gain access to the outside.



OEMX0301

Emergency roof escape

To open a roof escape hatch installed by Prévost in the event of an emergency, push out ventilation hatch fully, then press black tab backward and push handle out still pressing black tab, in order to release emergency hatch catch. An instruction decal with complete operating instructions is affixed on escape hatch itself.



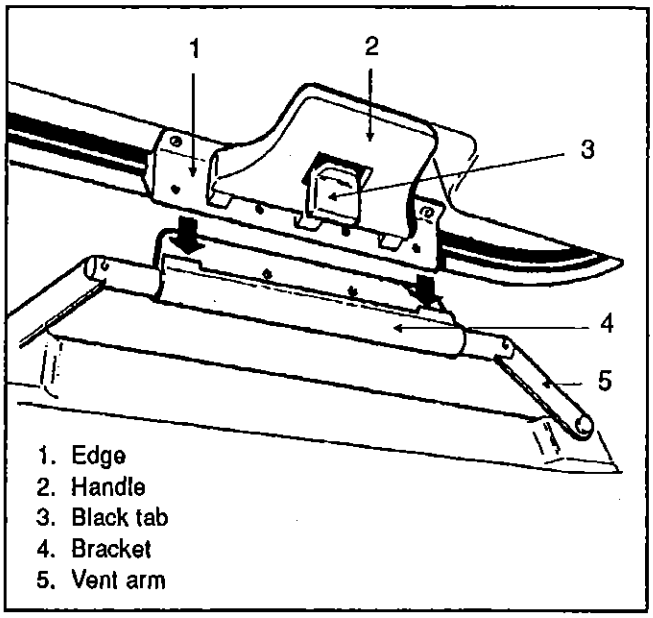
1. Emergency escape hatch
2. Instruction decal
3. Hatch handle
4. Black tab

OEMX0302

NOTE: Emergency roof escape can be opened to provide ventilation in the event of ventilation blower motor failure by simply pushing hatch upward.

CAUTION: Beware of low overhead clearances if running with roof hatches open.

To relatch handle after use, vent arms must be pushed upright in *"full open vent"* position, then insert edge between the two sections of the bracket and pull handle in to lock hatch. Finally, pull hatch in to close, one side after the other.



1. Edge
2. Handle
3. Black tab
4. Bracket
5. Vent arm

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SAFETY EQUIPMENT

Extinguishers

Two fire extinguishers are provided with the vehicle and are installed behind the driver's seat along the wall. Fire extinguishers may have been relocated following interior design and/or State or Provincial regulations.

Emergency warning reflectors

A kit of triangular reflectors (3) is provided for emergency situations to warn other drivers. This device indicates an emergency situation by reflecting the light emanating from a light source. The three reflectors should be placed as illustrated on box cover. This kit complies with FMVSS 125 (Federal Motor Vehicle Safety Standards).

ALARM SYSTEM

As an added protection to indicator lights, Prévost vehicles are equipped with audible alarms to inform the driver of the following operating conditions:

Indicator light	Audible alarm	Condition
Air primary	Buzzer	Low air pressure
Air secondary	Buzzer	Low air pressure
Tag axle	Beep	Tag axle wheels up
N/A	Beep	Ignition "OFF", parking brake not applied and/or pressure is applied on service brake pedal
N/A	Bell ringing	Fire in engine compartment

NOTE: The alarms for both primary and secondary low air pressure are produced by the same buzzer.

DAY TIME RUNNING LIGHTS

This system turns on automatically the low beams at a lower intensity as soon as engine is started and parking brake is released.

This system will be cancelled;

- when engine is stopped
- when parking brake is applied
- when the marker light switch is turned on.

WARNING: Never run vehicle at night with these lights only as they have a lesser intensity, and the system does not turn on the marker and clearance lights.

FOG LIGHTS

The halogen fog lights recessed in front bumper allow the driver a better visibility in foggy weather, and improve the range of vision just ahead of vehicle. They are also a useful *"active safety"* factor.

NOTE: Some States or Provinces may restrict the use of these lamps. Verify regulations governing each State and/or Province before using fog lights.

DOCKING AND CORNERING LIGHTS

Two (2) halogen lights are installed on each side of vehicle: one near the front and one near the rear.

When the switch is set to the *"Docking"* position, the four (4) lamps light simultaneously in order to facilate *"docking"* procedure.

When the switch is set to the *"Cornering"* position and the left or right turn signal is selected, the corresponding cornering light will illuminate to increase side visibility.

MUDS FLAPS & SPLASH GUARDS

Mud flaps are installed behind each wheel of front and tag axles in order to minimize dirt on the lower panels of vehicle and to reduce stone projections on following vehicles. Splash guards may also have been installed behind each dual wheel of the drive axle in order to reduce stone projections on tag axle wheels.

SUN VISORS & BLINDS

The vehicle is provided with three sun visors: one on each side and one at center of vehicle. The sun visors located on each side can be swung sideways if unhooked. Where blinds are installed, sun visors are not required as the blinds serve also as sun visors. To operate a blind, pull down by its tab to the appropriate position and release it; it will remain automatically in position. To lift, pull on the release cord beside the blind.

MINOR DEFECTS & DRIVING HINTS

GENERAL INFORMATION

Starting engine from driver's compartment

The following procedure is used to start and stop the engine from the driver's compartment.

CAUTION: Before driving coach, read the entire section of this manual.

Starting engine

1. Make sure the starter selector switch in engine compartment is set to the *"NORMAL"* position and that both battery disconnect switches (12 & 24 volts) are set to *"ON"* position.

2. Make sure the parking brake control button is pulled all the way up, so that the spring-loaded parking brakes are applied.

3. Make sure transmission is in neutral.

4. Turn ignition key to *"START"* position, then release it as soon as engine starts.

NOTE: If engine does not start, ignition key must be returned to *"OFF"* position prior to restarting.

CAUTION: Special precautions are necessary with turbocharged engines to avoid possible turbine damage. After starting, run the engine at low idle for two minutes to allow flowing of lubricant to the turbocharger. Afterwards, run at fast idle and check oil pressure before attempting to drive the vehicle.

Do not engage starter for more than 15 seconds at a time. If engine does not start within 15 seconds, release ignition key and allow starter to cool for one (1) minute before engaging starter again. Continuous use of the starter without allowing a cooling period may damage the starter motor.

With DDEC engines, no pressure on accelerator pedal must be applied before starting. An application on pedal will induce a fault information to the Electronic Control Unit, thus affecting the fuel system control.

If acccelerator pedal is depressed inadvertently, release it and wait approximately 30 seconds before resuming starting procedure.

Stopping engine

1. Apply parking brake then set transmission to the neutral position.

2. Allow engine to run at slow idle for at least two minutes, then shut off engine. This will ensure that the turbine speed has dropped, and the engine exhaust gas temperature is down to approximately 300 °F. If engine is equipped with pyrometers, temperature can be observed.

CAUTION: Do not shut the engine down directly from high rpm.

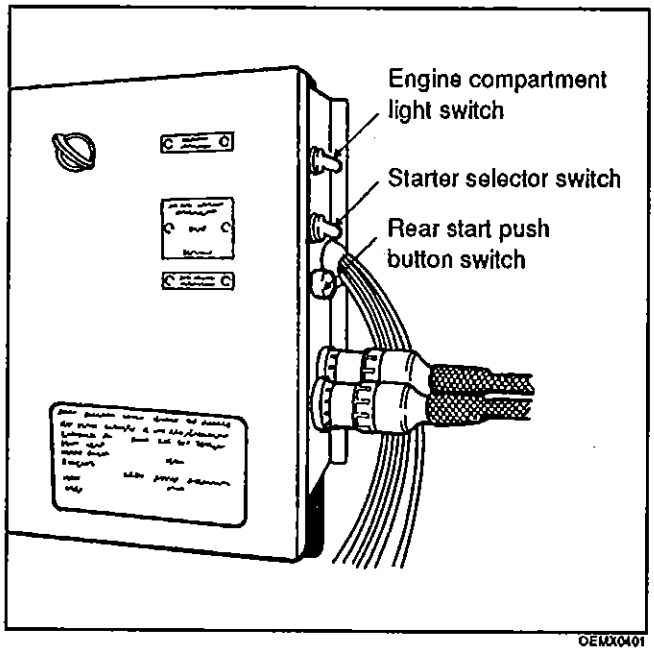
If vehicle is parked and left unattended for an extended period of time, both main battery disconnect switches (12 & 24 volts) should be set to the *"OFF"* position.

Starting engine from engine compartment

The following procedure is used to start and stop the engine from the engine compartment.

Starting engine

Switches for starting and stopping the engine from the engine compartment are mounted on the R.H. side of rear junction box.



WARNING: Before attempting to start engine from engine compartment, make sure parking brake is applied and transmission is in neutral.

1. Make sure the starter selector switch in engine compartment is set to the *"REAR START"* position and the battery disconnect switches (12 & 24 volts) are set to *"ON"* position.

2. Press starter push button switch and release as soon as engine starts.

WARNING: Stay away from moving parts, and do not wear loose clothes (no necktles, open jackets, shirttails, etc.).

CAUTION: Steps previously explained with respect to starter use also apply in this situation.

Stopping engine

Stop only by turning the starter selector switch to the *"OFF"* position.

DETROIT DIESEL ELECTRONIC CONTROL (DDEC)

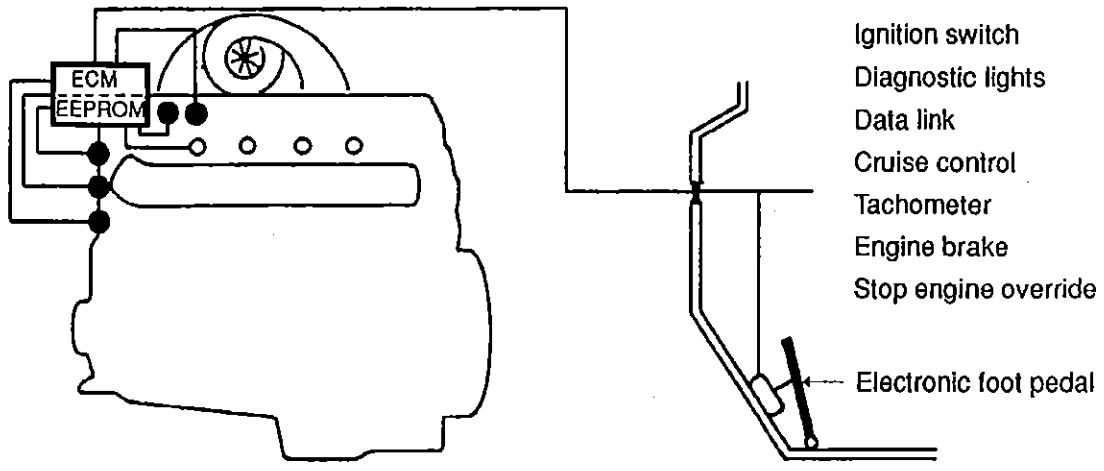
DDEC is an advanced technology electronic fuel injection and control system for Detroit Diesel engines. As an integral part of the engine, the DDEC system provides a number of performance features and driver benefits, including improved fuel economy and performance, reduced cold smoke, reduced maintenance and repair cost. These advantages are obtained by optimizing control of the critical engine functions which affect fuel economy, engine reliability and the performance of the injectors.

Its major components include an Electronic Control Module (ECM), Electronic Unit Injectors (EUI) and sensors. The ECM is the brain of the DDEC system and is located over the engine between both cylinder heads. Within the ECM is the Electrically Erasable, Programmable, Read Only Memory (EEPROM) that provides instructions for basic engine control functions such as rated speed and power, engine governing, cold start logic and diagnostics, plus an engine protection system.

The ECM continuously monitors and analyzes the DDEC system during engine operation with electronic sensors. The Electronic Unit Injectors (EUI) operate a similar principle to the mechanical unit injector system. However, a solenoid-operated control valve performs the injection timing and metering functions which make injector timing much simpler and more precise.

DDEC provides the capability to quickly diagnose system malfunctions by a self-diagnostic system; the self-diagnostic system monitors all engine sensors and electronic components and recognizes system faults and other engine-related problems by providing the technician with a diagnostic code. Diagnostic codes are logged into the ECM memory and can be read by performing procedure outlined in page 5-5.

The major components of the DDEC system are as follows:



● Sensors
○ Electronic unit Injectors

ECM - Electronic Control Module
EEPROM - Electrically Erasable, Programmable, Read-Only Memory

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ALLISON TRANSMISSION ELECTRONIC CONTROL (ATEC)

The ATEC system consists mainly of four elements: Electronic Control Unit (ECU), throttle sensor, speed sensor, and shift selector. These components work together to electronically control the transmission functions. The throttle sensor, speed sensor, and shift selector transmit information to the ECU. The ECU processes this information and then sends signals to actuate specific solenoids located on the control valve body in the transmission. The action of the solenoids affects hydraulic circuits, which in turn control the upshifts, downshifts, and lock-up functions. In addition to controlling the operation of the transmission, the ATEC monitors the system for abnormal conditions.

When one of these conditions is detected, ATEC is programmed to automatically respond in a manner which is safe for the driver, the vehicle, and the transmission. To do this, ATEC turns on the *"CHECK TRANS"* light on the dashboard or turns on both, the *"CHECK TRANS"* and the *"DO NOT SHIFT"* lights in shift selector. The *"CHECK TRANS"* light is a part of the built-in electronic service diagnostic system. It serves as a problem indicator and flashes a coded signal to locate the malfunctioning component.

To enhance troubleshooting and to allow interrogation of the ECU (Electronic Control Unit) for valuable service information, a diagnostic analyser can be used. To use it, plug the appropriate connector (not furnished by the manufacturer) in the terminal located in the upper section of steering compartment. You can also turn *"ON"* the *"ATEC-TEST"* switch in order to perform the proper maintenance of this electronic system (refer to the *"ATEC diagnostic codes"* in *"Specifications"* section).

Lock-up clutch

Engagement and release of the lock-up clutch occur automatically and should not be mistaken for range shifts. If you are a *"shift counter"*, it will be helpful to know when lock-up can occur. The lock-up engages after the load is rolling and the torque demand is low. Engagement of the lock-up clutch provides direct drive from engine to transmission. When the speed sensor senses a reduction in speed, the ECU will direct the lock-up shift valve to release the lock-up clutch, according to the programmed shift schedule. Release of lock-up clutch provides a torque converter drive from engine to transmission.

AUTOMATIC TRANSMISSION

Importance of proper oil level

1. Maintaining the proper oil level is very important. The transmission oil is used to apply clutches and to lubricate and cool the components. If the oil level is too low, the result can be poor performance because clutches will not receive adequate oil supply. If the oil level is too high, overheating results from the oil being churned and aerated.

2. Always check the oil level at least twice to ensure that an accurate check is obtained.

3. Transmission input speed and oil temperature significantly affect the oil level. An increase in input speed lowers the oil level; an increase in oil temperature raises the oil level. Thus, the oil level must always be checked with the engine running at idle (approximately 500 rpm), the parking brake applied, and the transmission in neutral. A final check of the oil level must be made when the transmission reaches normal operating temperature (160 - 250 °F; 70 - 120 °C).

Fill pipe protection

When adding oil or checking oil level, dirt or foreign material must not be allowed to enter the filler tube. Before removing the dipstick, clean around the end of the filler tube. Refer to *"Care & maintenance"* section for oil level check procedure.

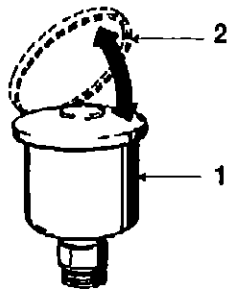
COLD WEATHER STARTING

Cold starting aid (ether)

The vehicle may be equipped with an ether cold starting aid designed to ease engine starting when temperature is below 35 °F (2 °C). Two types of cold starting aid are available: manually operated and electrically operated.

Manually-operated type

On vehicles equipped with a manually-operated cold starting aid, the starting fluid cup is located on top of the air intake duct. To use cold weather starting fluid, lift cover of the starting fluid cup, insert one 7 cc capsule, shut cover tightly, and then start engine from engine compartment (see procedure at the beginning of this section). Be sure to remove empty capsule before inserting a new one.



1. Cold weather starting fluid cup
2. Starting fluid cover

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CAUTION: This practice should be performed only when absolutely necessary. If required, we recommend that the starting fluid be used only in 7 cc capsule form, one at time. Excessive use of fluid could result in serious engine damage.

WARNING: FIRE HAZARD - Starting fluid used in the capsules is highly flammable, toxic, and possesses sleep-inducing properties. Do not smoke while using or handling capsules, and keep away from flame or high temperatures. Avoid inhaling fumes produced by starting fluid.

Electrically-operated type

On vehicles equipped with an electrically-operated cold starting aid, the control rocker switch is located near the ignition switch on the L.H. lower switch panel. This switch is provided with a locking mechanism to avoid accidental use when engine is running. To activate the ether starting aid, proceed as follows:

1. Prior to cranking engine, slide down lock tab while pressing rocker switch for three (3) seconds to fill solenoid valve.

2. Release switch to discharge shot.

3. Allow three (3) seconds for shot to discharge.

4. Start engine, use additional shots if necessary to keep engine running.

CAUTION: This pratice should be performed only when absolutely necessary. Excessive use of fluid could result in serious engine damage.

Engine block heater

The vehicle may be equipped with an engine immersion-type electric block heater to assist cold weather starting. The heater male electric plug is easily accessible through the engine oil reserve tank access door or beside the reserve tank. To use it, connect the female plug of an electrical extension cord to the heater plug. Some converted vehicles may have the heater connected to the coach AC power system. The extension cord must be plugged into a 110-120 V AC power source only. The engine block heater should be used whenever the vehicle is parked for an extended period of time in cold weather and a suitable power source is available.

CAUTION: Use only a 110-120 V AC power source. Extension cord must be of the grounded type (three prongs) and have a minimum rated capacity of 15 amps. Be sure to disconnect cord before starting and/or moving the vehicle.

Engine warm-up

After starting the engine, run it at low idle for two (2) minutes to allow flowing of lubricant to the turbocharger, then increase speed to fast idle for warm-up period by using *"FAST IDLE"* switch located next to the ignition switch on L.H. lower switch panel. Run the engine at fast idle and no load for about five (5) minutes to allow it to warm-up before applying a load. Parking brakes should be kept applied throughout warm-up. Gauges and indicator lights should be monitored to check that all conditions are normal. If an abnormal condition should develop, stop engine immediately and have condition corrected.

WARNING: Never let the engine run in an enclosed, non-ventilated area. Exhaust fumes from the engine contain dangerous gas which can be fatal if inhaled.

NOTE: The engine will come up to normal operating temperature shortly after you start driving; if possible, avoid going to full throttle until engine coolant temperature reaches 140 °F (60 °C).

Transmission warm-up

When temperature is below -20 °F (-29 °C), the *"DO NOT SHIFT"* and *"CHECK TRANS"* will stay *"ON"* after the engine is started. The transmission will stay in neutral, regardless of the gear range selected until it warms past -20 °F (-29 °C). At that point, the *"DO NOT SHIFT"* light will turn off and the transmission will operate only in first gear or reverse. When the *"CHECK TRANS"* light goes out at 20 °F (-7 °C), the transmission is warm enough to safely operate in all gear ranges.

ROUTINE INSPECTION BEFORE A TRIP AND ON THE ROAD

With engine stopped

Extinguishers

Ensure that fire extinguishers are in working order and easily accessible.

Escape hatch

Check that escape hatch can be easily opened.

Driver's compartment

Adjust mirrors and seat.

Doors

Make sure that all exterior doors are closed.

Tools and spares

Check for wheel nut wrench, door keys, spare belts, reflectors, and jack.

Washer reservoir

Check that it is full. To prevent the windshield washer fluid from freezing during the winter, use antifreeze windshield washer.

General

Check general vehicle condition and verify all exterior lighting.

Tires

All tires should be inspected for cuts and correct inflation. On both aluminum alloy and steel wheels, nuts should be checked using a torque wrench to specifications given in the Maintenance Manual.

Wheel bearings

Check oil level in sight glass (see page 6-3).

CAUTION: During a fuel stop, especially if a brake job has been performed a short time ago, apply hand on wheel bearing cover and check for overheating.

Leaks

Check throroughly under vehicle for any leaks.

Coolant level

The cooling system is completely filled when the coolant (cold) is visible in the sight glass on the right side of the surge tank. If topping-up is necessary, fill the system with the same mixture ratio already used in the system and as instructed in the Maintenance Manual.

WARNING: Hot engine coolant is under pressure. Never remove cap until coolant has cooled.

Engine oil

Check oil level; refill directly into engine or from reserve tank (see page 6-2).

Air system

Purge accessories and wet tanks by opening drain valve (see page 6-4).

Power steering

Check oil level (see page 6-3).

Belts

Check for worn belts.

Belt tensioners

Visually check belt tension and tensioner shaft length (see page 6-4).

With engine running

NOTE: Vehicle must be on level ground.

Gauges and buzzers

Gauges should be in normal position, warning lights and buzzers off.

Fuel level

Be sure level is sufficient.

Transmission

Check oil level (see page 6-2).

Leaks

Inspect around vehicle and listen for any air leak.

Water separator

Purge drain valve (see page 6-4).

Turbocharger

Look for any leaks or unusual sounds coming from the turbo compressor.

Service brakes

Check for pressure build-up. With engine stopped and no brake applied, loss should not exceed 3 psi/min. (21 kPa/min). Make a full brake application; loss should not exceed 7 psi (48 kPa).

Parking and emergency brakes

With air pressure above 65 psi (448 kPa), lower pressure with brake pedal applications, check that buzzer works and that control button lifts up. Wait until air pressure exceeds 95 psi (655 kPa) before releasing parking brakes.

RECOMMENDATIONS

- Make sure the basic principles of operation of the vehicle are understood.

- Maintain the vehicle in good running condition.

- Do not drive your vehicle with an extremely low fuel level. This advice is very important, especially if your vehicle is equipped with an auxiliary fuel tank. Unlike a gasoline engine, if a diesel engine runs out of fuel it will not simply restart after fuel is added to the tank. The engine must be *"primed"* (see procedure in the Maintenance Manual).

- Allow engine to run at slow idle for at least 2 minutes before turning it off.

- Engine should always be at idle speed when shifting from neutral to reverse or forward range.

- Automatic transmission shift pattern does not include a park position. Parking brake must therefore be applied to hold vehicle when it is unattended. Gearshift should then be in neutral position. If engine is stopped without applying the parking brake, a warning buzzer will sound until the parking brake is applied and your foot is removed from the brake pedal.

- Perform procedures as detailed in this manual.

- Unless otherwise specified, engine should be turned off for all lubrication and maintenance procedures.

- Do not attempt to push-start or pull-start the vehicle.

- Do not tow vehicle without first removing the drive axle shafts or disconnecting the drive shaft. Internal lubrication of the automatic transmission is inadequate when the vehicle is towed.

- Fire extinguishers should be located in order to be accessible at all times. In case of fire, get everyone out of the vehicle, then think of your own danger before attempting to fight the fire.

- When driving on ice or snow, any acceleration or deceleration should be done gradually.

NOTE: Normal operation as well as some emergencies or abnormal conditions are covered in this booklet. Any malfunction interfering with satisfactory operation should be corrected immediately, particularly when safety may be involved.

- The Gross Vehicle Weight Rating (G.V.W.R.), and the Gross Axle Weight Ratings (G.A.W.R.), for front, drive and tag axles of your vehicle are listed on a metal certification label located on the panel at the L.H. side of driver's seat, under the side control panel. The G.A.W.R. is the maximum load that can be applied on each axle of the vehicle and is more than what is legally permitted on some highways.

To exceed the G.V.W.R. and/or the G.A.W.R., voids the PREVOST warranty.

- Do not conceal the serial numbers and certification plates (for location, refer to *"Specification"* section). Reinstall in same locations after adding any trim.

- Installation of odd type and size of windows may require cutting the vertical window post of vehicle structure. However, no more than three (3) of these posts should be cut on one side of a vehicle and two (2) adjacent posts should never be cut.

IMPORTANT

VIOLATION OF THESE INSTRUCTIONS IS NOT SAFE AND CONSTITUTES SUFFICIENT REASON FOR PREVOST TO VOID ITS WARRANTY ON ANY AFFECTED AREA.

HEATING AND AIR CONDITIONING

Ventilation

Driver should always try to introduce as much circulation of outside fresh air as possible without hampering heating and air conditioning systems. Under extreme temperature conditions however, when maximum capacity is required, the adjustable intake dampers (see following pages) should be closed.

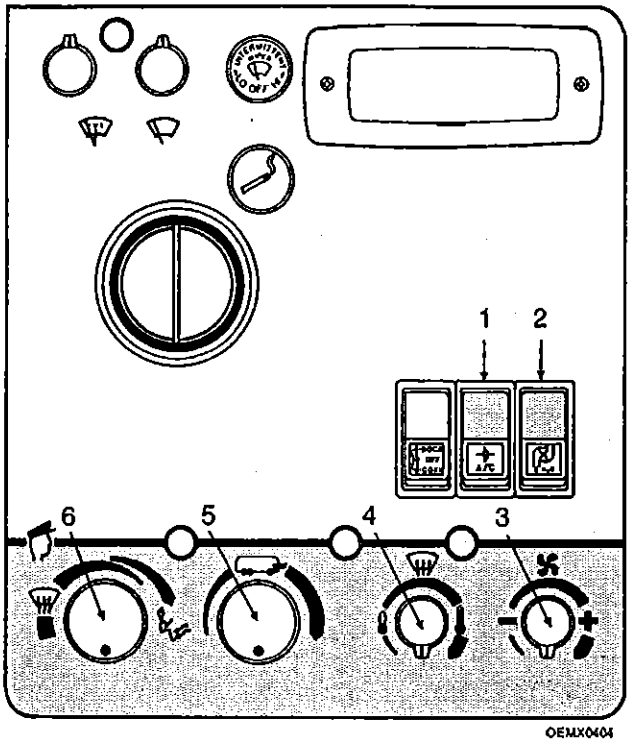
It should be remembered that the inside of vehicle should always be slightly pressurized to minimize the entrance of dust and moisture.

Vehicle heating and air conditioning systems have been designed to allow circulation of some outside fresh air, so windows should be kept closed at all times.

In case of air conditioning system failure, substitute ventilation may be provided by opening roof-mounted emergency vent(s) (if vehicle is so equipped).

Driver's compartment A/C - heating system

Vehicle equipped with driver's system only



1. *"A/C clutch"* switch

Push down rocker switch to operate the air conditioning system, and push up to turn it off.

CAUTION: The air conditioning system should not be used when outside temperature is below 40 °F (5 °C).

NOTE: During operation of air conditioning system, windows should be kept closed and door not left open longer than necessary.

2. *"Hot water pump"* switch

Push down rocker switch to activate the hot water pump, then push up to turn it off.

The use of the hot water pump increases the hot water flow circulating through the heater core, thus delivering more heat.

3. *"Fan"* speed control

Turn knob clockwise at the first position to obtain minimum air flow to circulate warm, cool, or outside air, according to settings of temperature control knob and A/C clutch switch. Turn clockwise again to obtain the desired ventilation speed.

4. *"Temperature"* control

Once the A/C clutch switch is set to the proper position and fans are on, select the desired temperature by turning the temperature control knob clockwise to raise or counterclockwise to lower temperature. Only a slight movement of knob is generally sufficient to change temperature setting.

Temperature control knob is used to select interior temperature within the range of 65 to 78 °F (18 to 26 °C). Once temperature is selected, system will automatically maintain it within close limits.

At extreme clockwise position, full heat will be maintained.

WARNING: Excessive high temperature in driver's zone could induce drowsiness, affecting driver's ability to operate the coach safely.

5. *"Recirc.-fresh air"* control

This knob should normally be rotated clockwise to allow maximum fresh air admission. When outside temperature is extremely high and maximum cooling is required or when outside temperature is extremely low and maximum heating is required, the knob should be rotated counterclockwise to shut off the fresh air admission, thus recirculating the air inside vehicle. This position should also be selected when driving vehicle on dusty roads and in air polluted areas to avoid admission of contaminated air inside vehicle.

6. *"Feet air outlet"* control

This control is used to control the air flow delivered under the dash on the driver's side. Turn control knob clockwise to increase air flow and counterclockwise to decrease.

How to use the controls

- To ventilate without heat or air conditioning

Turn the *"temperature"* control knob to the maximum counterclockwise position (cool), turn the *"recirc.-fresh air"* control knob to the maximum clockwise position (fresh air), then set the *"A/C clutch"* and *"hot water pump"* switches to the *"OFF"* position.

- To defrost

To obtain the maximum defrosting efficiency, switch the *"fan"* speed control to the highest position, set the *"hot water pump"* switch to the *"ON"* position, turn the *"recirc.-fresh air"* control knob to the maximum clockwise position (fresh air), turn the *"feet air outlet"* control knob to the maximum counterclockwise position (defrost position), then turn the *"temperature"* control to the maximum clockwise position (warm).

• To dehumidify

Because an air conditioner dehumidifies as it cools, you can use it in cool weather to help defog the windows. Turn on the *"fan"* speed control and set the *"A/C clutch"* switch to the *"ON"* position, turn the *"feet air outlet"* control knob to the maximum counterclockwise position (defrost position), then adjust the *"temperature"* control to a comfortable setting.

CAUTION: The air conditioning system should not be used when outside temperature is below 40 °F (5 °C).

• To turn everything OFF

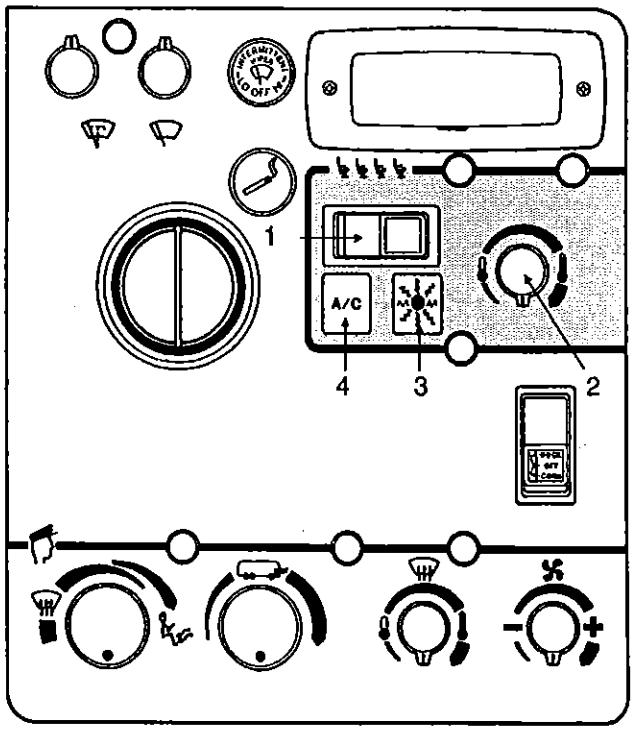
Set the *"A/C clutch"*, *"hot water pump"* and *"fan"* speed control switches to the *"OFF"* position and turn the *"temperature"* control knob to the maximum counterclockwise position (cool).

Vehicle equipped with driver's and central systems

The controls used are the same as for vehicle equipped with a driver's system only, with the exception that there is no independent *"hot water pump"* and *"A/C clutch"* switches. Instead there is one two-way switch as described below.

NOTE: The driver's heating and defrost systems are independent from the central system.

Central A/C - heating system



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1. *"A/C - heat"* switch

This switch has three positions: *"A/C - OFF - HEAT"*. Set the switch to:

- *"A/C"* position (L.H. side) when the interior of the vehicle needs to be cooled or dehumidified.

- *"Heat"* position (R.H. side) when the interior of the vehicle needs to be warmed, or ventilated.

- *"OFF"* position (center) before stopping vehicle engine.

NOTE: Fuel economy is slightly reduced when *"A/C"* position is used.

To operate air conditioning system when vehicle is stationary, engine should run at fast idle. During operation of air conditioning system, windows should be kept closed and door not left open longer than necessary.

In order to prevent battery discharge, A/C - heating system will not operate if vehicle charging system is not working properly.

CAUTION: *"A/C"* position should not be used when outside temperature is below 40 °F (5 °C).

While the A/C system is running, make sure the vehicle is parked at least 4 feet (1,2 m) from other vehicles to allow sufficient air flow through the condenser core.

2. *"Temperature"* control

Once the *"A/C - heat"* switch is set to the proper position, select the desired temperature by turning the temperature control knob clockwise to raise or counterclockwise to lower temperature. Only a slight movement of knob is generally sufficient to change heat setting.

Temperature control knob is used to select interior temperature within the range of 65 to 78 °F (18 to 26 °C). Once temperature is selected, system will automatically maintain it within close limits.

3. *"Heat"* indicator light

This indicator will be illuminated when hot water is circulating through the water valve, no matter which mode has been selected (A/C or heating).

4. *"A/C"* warning light

This light is designed to light up when the *"A/C"* system is not working properly. If this happens, first stop *"A/C"* system, then perform the following checks:

- Check the condenser for obstruction. Clean if necessary. (Refer to maintenance manual).

- Check that the evaporator and condenser motors are operating.

- Check evaporator filter for cleanliness. Clean or replace as required. (Refer to *"Care and Maintenance"* section).

- Check the air return duct(s) for obstruction. Ducts are located on the left side or on both sides of the vehicle floor, approximately in the center. Clean if necessary.

After these checks, test the system. If the *"A/C"* warning light does not turn off, set the *"A/C - heat"* switch to *"OFF"* position, and seek qualified service assistance.

How to use the controls

• To ventilate

Turn the *"temperature"* control knob to the maximum counterclockwise position (cool), then set the *"A/C - heat"* switch to the *"heat"* position.

• To heat

To ensure the maximum efficiency of heating system, set the *"A/C - heat"* switch to the *"heat"* position, then adjust the temperature control to a comfortable setting.

• To dehumidify

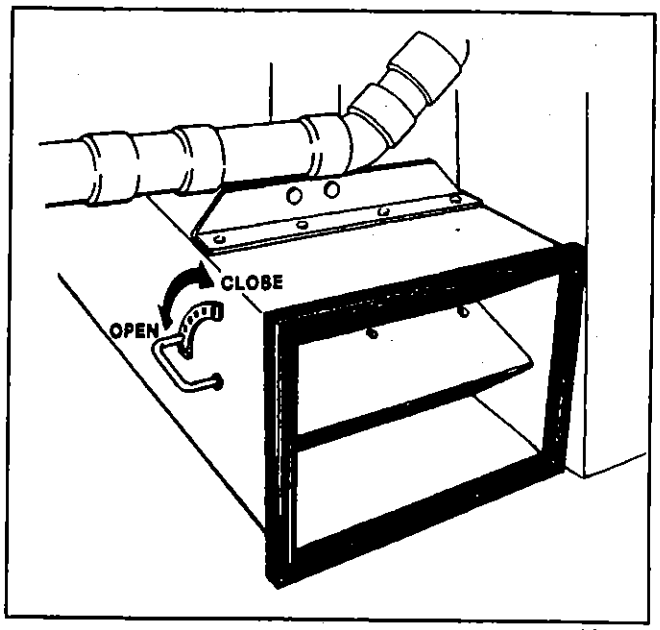
Because an air conditioner dehumidifies as it cools, you can use it in cool weather to help in drying air. Set the *"A/C - heat"* switch to the *"A/C"* position, then adjust the "temperature" control to a comfortable setting. With this set-up, the A\C and heating will run simultaneously, thus drying air as it flows through the evaporator and then heating it as it flows through the heater radiator.

CAUTION: *"A/C"* position should not be used when outside temperature is below 40 °F (5 °C).

• To turn everything OFF

Set the *"A/C - heat"* switch to the *"OFF"* position (center).

An adjustable air intake damper is located in the evaporator compartment (third compartment on the left side of vehicle). The damper should normally be open. Under extreme temperature conditions only, it can be closed or partially closed according to the inside temperature reached in the coach, to block the addition of ambient air and heat or cool only the air that is in the coach. As soon as extreme heating or cooling is no longer required, the damper should be reopened.



OEMX0406

WINDSHIELD WIPERS & WASHERS

Two air-operated windshield wipers are provided as standard equipment. Wipers are controlled by two small knobs mounted on R.H. console. Left knob controls left wiper and both windshield washers while right knob controls right wiper only.

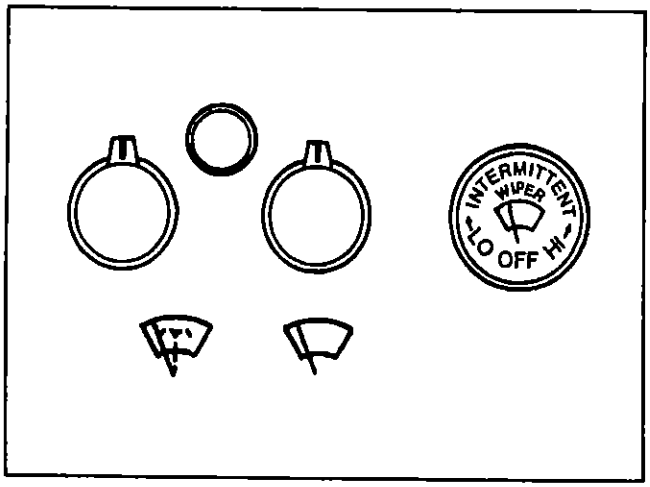
To operate windshield wipers, turn knobs clockwise and set wipers to the desired speed. Wipers will automatically park when control knobs are turned at extreme counterclockwise position.

To operate windshield washers, push and hold the L.H. windshield wiper knob. Washers will operate for several seconds; control knob must then be released for a few seconds, allowing pump to refill. When windshield washers are in use, windshield wipers should normally be on.

WARNING: In cold weather, windshields should first be warmed up with defroster before using washers, in order to prevent icing and serious visibility impairment.

A third knob is provided if vehicle is equipped with windshield wiper delay. Turn knob clockwise to effect delay action. Rotating knob further clockwise increases time. Turn knob completely counterclockwise when wipers are turned off.

CAUTION: Do not run wiper blades on dry windshields as this may scratch windshields and/or damage blades.

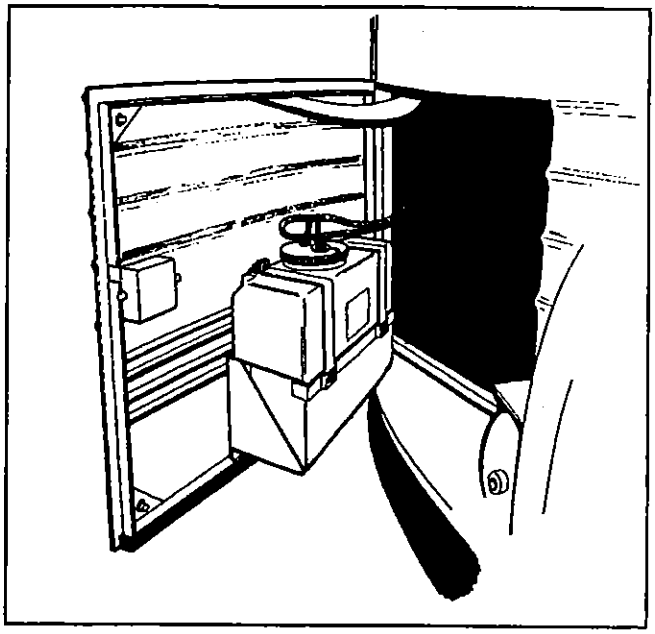


OEMX0407

Windshield washer reservoir

Windshield washer reservoir is located in front left compartment (steering compartment) below driver's floor. This reservoir has a capacity of approximately 3 U.S. gallons (12 liters). Its spin-on type cover is provided with a removable cap to ease windshield washer reservoir filling. Reservoir supply should be checked regularly.

Spray jets are mounted under windshield wiper arms. The reservoir's fluid is forced by air pressure through rubber tubes into spray jets and onto windshield.



OEMX0408

ELECTRIC CIRCUIT PROTECTION

Three types of cutoff device are installed to protect the electric circuits of vehicle: fuses, automatically and manually resettable circuit breakers. If an electrical device is inoperative, check the corresponding cutoff device.

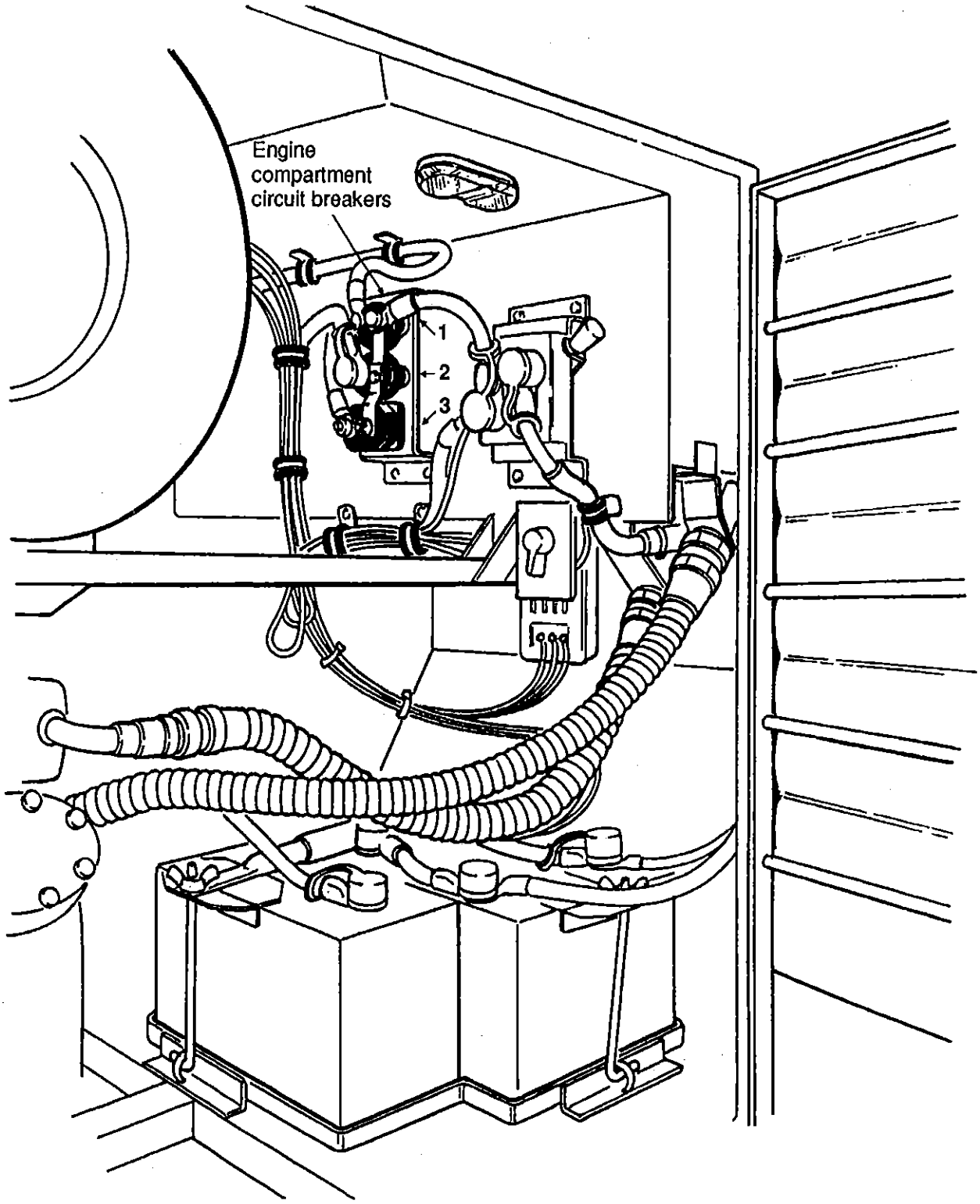
CAUTION: Never replace a fuse with a higher-rated one since severe damage to the electrical system will occur.

All automatically-resettable circuit breakers are installed inside the front and the rear junction boxes. An instruction decal is affixed near each junction box. When one of these circuit breakers opens due to a shorted circuit, it will automatically reset when the breaker element cools. As long as the short exists, the breaker will continue to open and close intermittently. In this case, turn off the defective circuit until the cause can be located and corrected.

The manually-resettable circuit breakers, which are rated for heavy loads (with the exception of the ECU and ECM breakers), are used only for the main circuits and must be manually reset if they open, by pressing the red button. Seven (7) manually-resettable circuit breakers are povided on vehicle and are mounted as follows:

In engine compartment:

1. Rear junction box feed 90 amps - 24 volts
2. Front junction box feed 90 amps - 24 volts
3. Central A/C junction box feed 200 amps - 24 volts



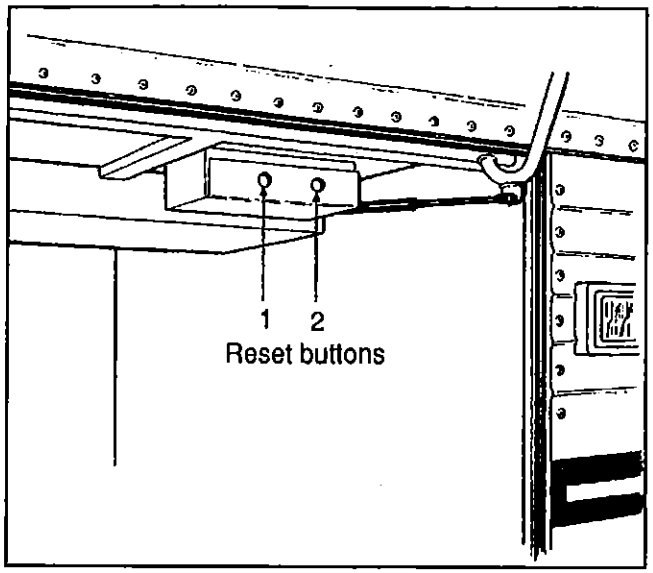
OEMX0409

Reset buttons are located at rear of the mounting plate

In the last L.H. side baggage compartment:

1. Condenser fan motor feed 105 amps - 24 volts
2. Evaporator fan motor feed 105 amps - 24 volts

NOTE: Only on vehicle equipped with a central A/C and heating system.

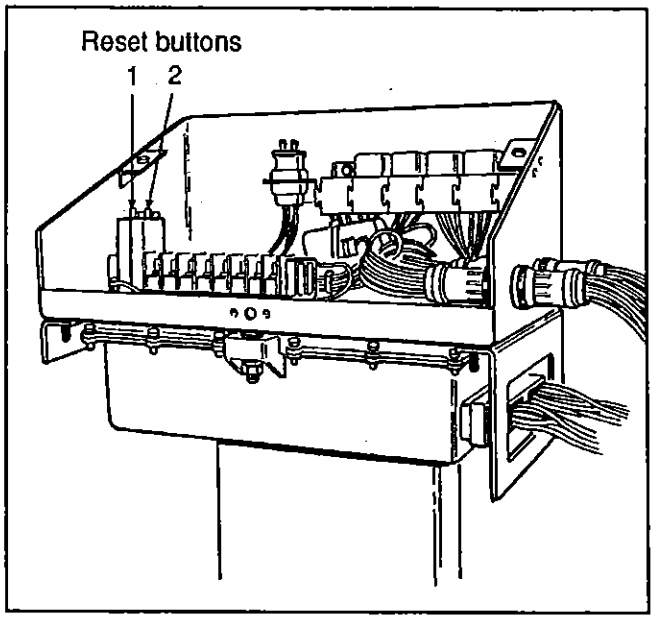


OEMX0410

In steering compartment:

1. Electronic control unit feed (ATEC) 5 amps - 12 volts
2. Electronic control module feed (DDEC) 8 amps - 12 volts

To gain access to these breakers, open the steering compartment door, then remove the metallic cover on the ECU mounting plate (electronic control unit located over the steering gear housing) by rotating 1/4 turn counterclockwise the three (3) retaining screws.



OEMX0411

JUMP STARTING

Whenever it becomes necessary to start the engine while batteries are discharged, use another power source of the same voltage (24 volt DC), negative grounded and proper jumper cables.

WARNING: Procedures other the one outlined could cause injury or damage from battery acid spray, explosion, or charging system overload.

- Never connect to the negative post of the discharged battery.

- Never allow the two vehicles or the jumper cable clamps to touch each other.

- Never attempt to jump start a vehicle if the discharged battery fluid is frozen or if the battery fluid level is low, as the battery may rupture or explode.

- Do not jump start vehicles equipped with maintenance-free batteries if the test indicator is light yellow.

- Turn off all lights, heaters and other electrical accessories. Make sure the parking brake is applied and the transmission is set to *"NEUTRAL"* before attempting to jump start the engine.

Wear eye protection and remove rings, watches with metal bands and other metal jewelry.

1. Connect one end of the red jumper cable to the positive (+) post of the booster power source.

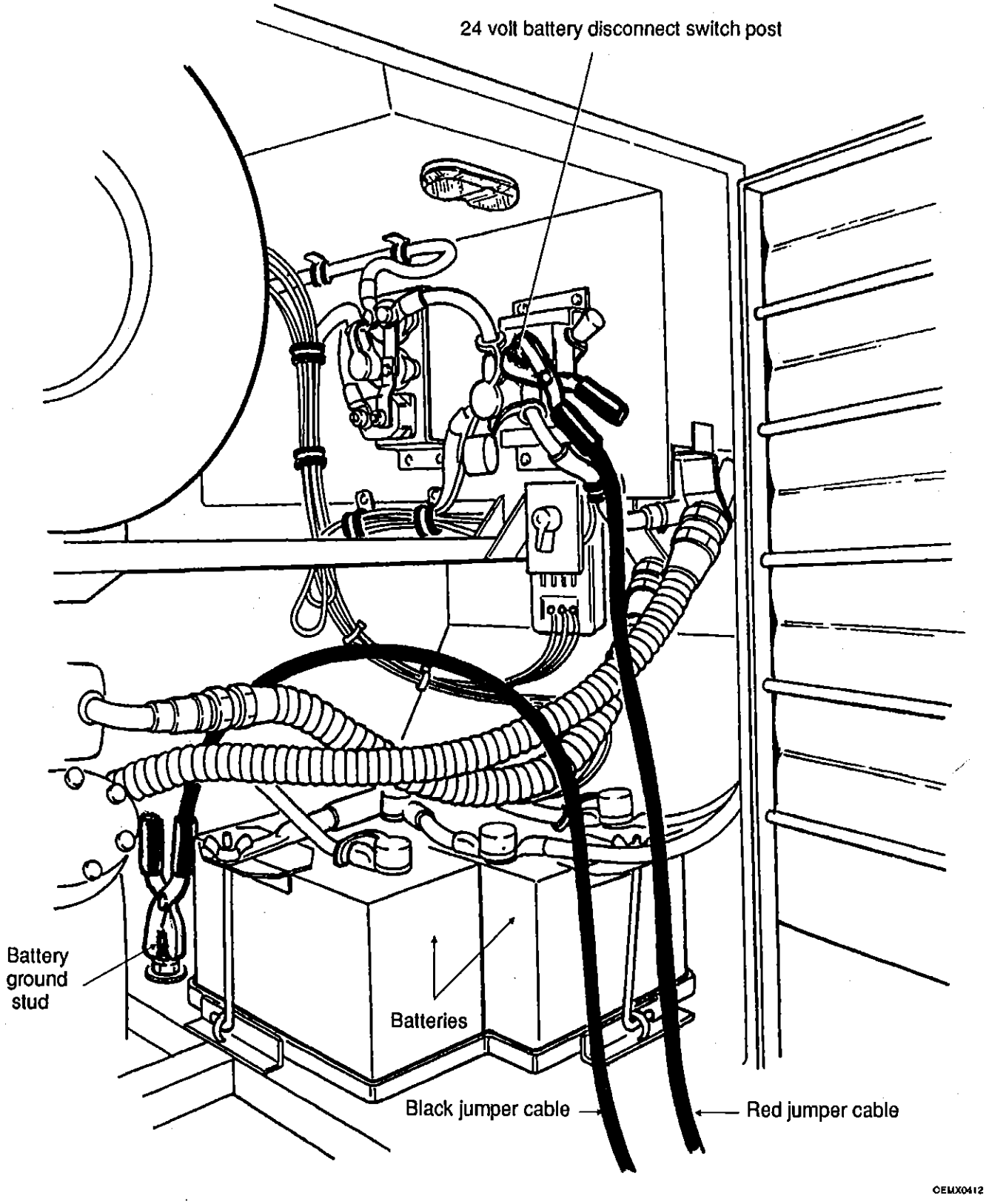
2. Remove the red protective cap from the 24 volt battery disconnect switch post, then connect the other end of the red jumper cable to this post according to the following illustration (it may be necessary to remove the insulating varnish on the battery switch disconnect post).

3. Connect one end of the black jumper cable to the negative (-) post of the booster power source.

4. Remove the black protective cap from the battery ground stud fixed on frame, then connect the other end of the black jumper cable to this stud as shown on illustration.

5. Start the engine in the vehicle that is providing the jump start. Let the engine run for a few minutes, then start the engine in the vehicle that has the discharged batteries.

6. To remove the cables, perform the above procedure in reverse order, then replace the protective caps.



NOTE: Jumper cables must withstand 500 cranking amperes. If cable length is 20 feet (6 m) or less, use 2/0 (AWG) gauge wires. If cable length is between 20-30 feet (6-9 m), use 3/0 (AWG) gauge wires.

TIRES

Tire pressure

The condition and pressure of the tires can greatly affect both useful tire life and road safety.

NOTE: The recommended tire inflation pressures are given in the *"Technical Description"* section.

At regular intervals, verify the tire pressures. Use an accurate tire pressure gauge when checking inflation pressures. Never exceed the maximum tire inflation pressure specified on each tire.

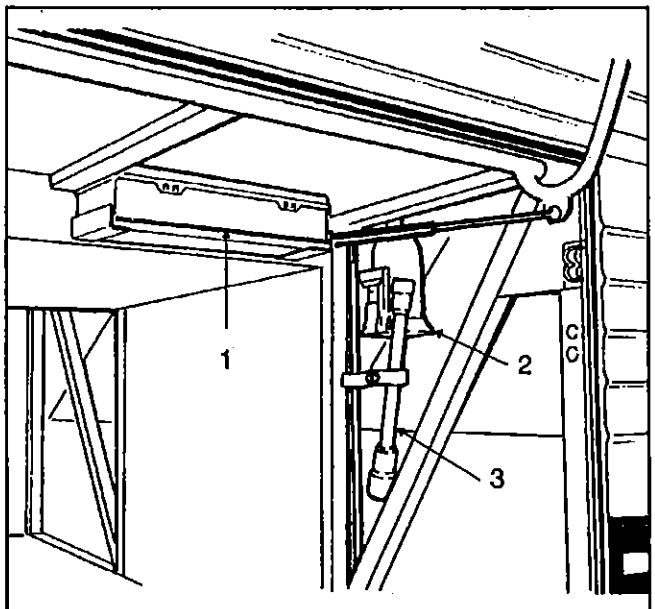
Cold tire inflation pressure means: When a vehicle has not been driven for at least 3 hours or less than 1 mile.

WARNING: Incorrect tire pressures cause increased tire wear and adversely affect road holding of the vehicle, leading to loss of vehicle control.

Changing wheels

Tire failure is a rare event these days, if tires are properly cared for. In case of a flat tire, move vehicle a safe distance away from traffic and apply the parking brake. Remember to switch *"ON"* the hazard flashers and to set up the triangular reflectors at an adequate distance to warn other vehicles, according to the highway code regulations.

A 12 ton hydraulic jack, a wheel nut wrench and a kit of triangular reflectors are installed inside the first R.H. side baggage compartment, near the entrance door.



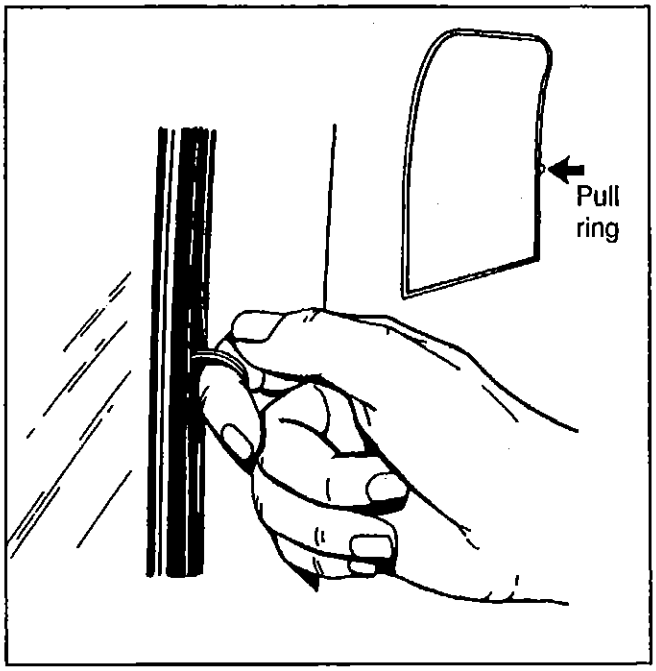
1. Triangular reflector box
2. Hydraulic jack
3. Wheel nut wrench

OEMX0413

We suggest that you ***do not*** attempt to change a wheel. First, the wheel and tire is very heavy and usually you have no place to put the flat that you take off. Second the wheel nuts, especially those on an inner dual, can become very tight after being on for only a short time. Often a heavy air wrench is required to get these nuts loose. We suggest you get help via CB radio or cellular phone. There are tire service trucks all over the country who can bring a wheel and make the change safely. If you have no choice and must do it yourself, see instructions in the *"Maintenance Manual"*.

WINDOWS

Some panoramic-type windows (with or without a lower sliding section) may have been provided with a metal ring for removal purposes. To remove window, pull on the metal ring located in the rubber strip in order to remove strip, then push firmly on window to expel it from its frame.

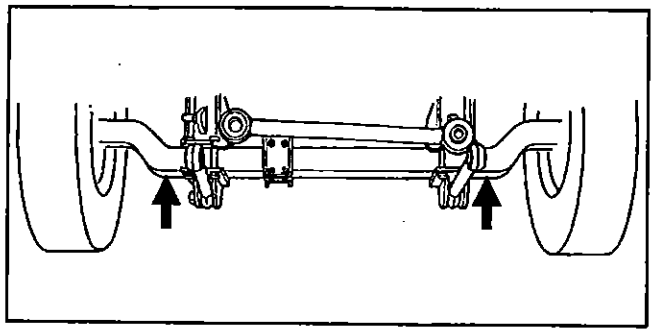


OEMX0414

JACKING POINTS

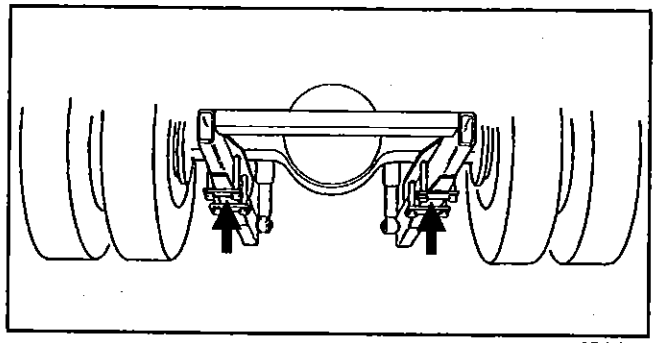
One (1) jacking point on each side of each axle is provided on vehicle. Refer to the following illustrations for details.

CAUTION: Remember that only these jacking points must be used.



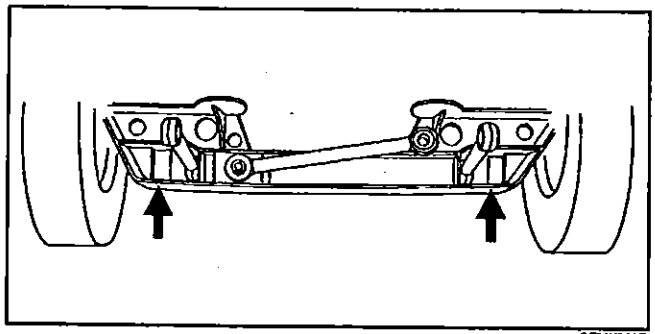
OEMX0415

Jacking points on front axle



OEMX0416

Jacking points on drive axle



OEMX0417

Jacking points on tag axle

TOWING

Two tow eyes are provided at front and rear under vehicle. Towing should be done from these points only. A solid link tow bar and safety chain must be used. This recommended method prevents damaging the vehicle. If required, connect an auxiliary air supply to the vehicle to actuate the vehicle brakes. The engine cannot be started by pushing or towing.

WARNING: Never allow passengers to ride in a towed vehicle for any reason whatsoever.

CAUTION: Internal lubrication of the transmission is inadequate when the vehicle is towed. The propeller shaft or the axle shafts should be removed when being towed to avoid possibility of damaging transmission.

NOTE: When the propeller or axle shafts are reinstalled, ensure the nuts are tightened to the appropriate torques and the axle shafts are properly installed (R.H. & L.H.) and/or the propeller shaft is properly phased. Refer to the *"Maintenance Manual"* for torque values.

SPECIFICATIONS

DIMENSIONS

Overall length	40' 0" (12 192 mm)
Overall width	102" (2 591 mm)
Overall height (over closed roof hatch)	
- standard	133.3" (3 386 mm)
- optional	136.3" (3 462 mm)
	139.3" (3 539 mm)
Entrance door opening	
- front (standard)	26" (660,4 mm)
- central (optional)	31" (787,4 mm)
Headroom	
- standard	80" (2 032 mm)
- optional	83" (2 108 mm)
	86" (2 184 mm)
Floor height from ground	53.3" (1 354 mm)
Ground clearance	11" (279,4 mm)
Wheelbase (center of front axle to center of drive axle)	280" (7 112 mm)
Front overhang	71.3" (1 811 mm)
Rear overhang	85.8" (2 179 mm)
Front track	85.67" (2 176 mm)
Drive track	76.5" (1 943 mm)
Rear track (tag axle)	82" (2 083 mm)
Turning circle radius (exterior front corner)	43' 0" (13 106 mm)

WEIGHTS

Curb weight (before conversion)	26 000 lbs (11 794 kg)
Gross vehicle weight rating	42 000 lbs (19 051 kg)
Gross axle weight rating	
- front axle	13 000 lbs (5 897 kg)
- drive axle	22 000 lbs (9 979 kg)
- tag axle	10 000 lbs (4 536 kg)

The Gross Vehicle Weight Rating (G.V.W.R.) and the Gross Axle Weight Ratings (G.A.W.R.) for front, drive and rear axles are listed on a certification plate located on the panel at the L.H. side of driver's seat, under the side control panel.

CAPACITIES

Engine oil	
- crankcase	23 to 25 U.S. qts (22 to 24 liters)
- filter	2 U.S. qts (2 liters)
- cooler	1.5 U.S. qts (1,4 liters)
- reserve tank	10 U.S qts (9,5 liters)
Fuel tank	
- standard	160 U.S. gal. (606 liters)
- optional (auxiliary tank)	90 U.S. gal. (341 liters)
Cooling system	
including driver's heating system	23 U.S. gal. (88 liters)
including driver's and central heating systems	24 U.S. gal. (91 liters)

Transmission oil

7.5 U.S. gal. (28,4 liters) (does not include external circuits)

Differential oil

13.7 U.S. qts (13 liters)

Power steering reservoir

9.6 U.S. qts (9,1 liters)

Windshield washer reservoir

3 U.S. gal. (11,4 liters)

FUEL TYPE

ASTM specification	D-975
Recommended grade	1-D
Acceptable grade	2-D

WHEELS AND TIRES

Steel wheels	8.25 X 22.5
Aluminum forged wheels	8.25 X 22.5
Tires	12 R 22.5
Recommended tire inflation pressure (cold)	
- front axle	100 psi (690 kPa)
- drive axle	90 psi (621 kPa)
- tag axle	70 psi (483 kPa)

CAUTION: These tire pressures are established in accordance with the maximum allowable load on each axle. A lower pressure is recommended if the axle load is less than the above specifications. Weigh coach fully loaded and pressurize according to tire manufacturer's recommendations.

V-BELTS

Radiator fan drive (transfer)

Make: Gates
Model: A 92
Qty: 1 (triple)

Tecumseh compressor (driver's A/C only)

Model: Gates
Model: AX 55
Qty: 1

Carrier compressor (central A/C system)

Make: Gates
Model: CX 96
Qty: 2

Alternator 24 V 75 amps

Make: Gates
Model: BX 67
Qty: 1

Alternator 12 V 130 amps

Make: Gates
Model: BX 87
Qty: 1

TRANSMISSION

Allison five speed automatic HT-755 CR with ATEC control (ATEC: Allison Transmission Electronic Control).

Gear	Ratio
1st	3.69
2nd	2.00
3rd	1.58
4th	1.25
5th	1.00
Rev.	9.65
Converter	1.81

DRIVE AXLE RATIO

3.58 : 1 or 3.73 : 1

BRAKES

Air operated, drum type

Brake chamber type 24 on front axle, 30-36 on drive axle and 16 on tag axle

Automatic slack adjuster (optional)

Two cylinder air compressor, engine gear driven, water-cooled and lubricated

Air dryer

Nylon color-coded air lines

STEERING

Tilt steering wheel and telescopic steering column

Integral hydraulic-assisted steering gear

System pressure 1500 psi (10 343 kPa)

ELECTRICAL SYSTEM

24 & 12 volt negative grounded

Available alternators:

- 130 amps/12 volts
- 75 amps/24 volts
- 270 amps/24 volts

Four (4) model 1150, 12 volt maintenance-free batteries, each with a 625 cold cranking amp capacity.

Battery equalizer(s)

Wiring protection: fuses, manual and automatic resettable circuit breakers

12 volt and 24 volt manual disconnect switches

SUSPENSION

Front axle

- 2 air springs
- 2 shock absorbers
- 4 longitudinal radius rods
- 1 transversal radius rod
- 1 height control valve
- 1 sway bar (optional)

Drive axle

- 4 air springs
- 4 shock absorbers
- 3 longitudinal radius rods
- 1 transversal radius rod
- 2 height control valves

Tag axle

- 2 air springs
- 2 shock absorbers
- 4 longitudinal radius rods
- 1 transversal radius rod

ALIGNMENT

Front axle

Toe-in:	1/8" ± 1/32" (3 mm ± 0,8 mm)
Caster:	+ 2 1/2° to + 4 3/4° (+ 3° desired)
Camber (RH):	- 1/8° ± 7/16°
Camber (LH):	+ 3/8° ± 7/16°

Tag axle

Toe-in:	0" ± 1/32" (0 mm ± 0,8 mm)

HEATING AND AIR CONDITIONING

Driver's system

- air conditioning capacity:	2 tons
- refrigerant type:	Freon R-12
- heating capacity:	37,800 Btu/hr.
- air flow:	450 cfm (12,74 m^3/min.)

Central system

- air conditioning capacity:	7.5 tons
- refrigerant type:	Freon R-12
- heating capacity:	152,000 Btu/hr.
- air flow:	2,700 cfm (76,45 m^3/min.)

A/C COMPRESSOR (DRIVER'S SYSTEM ONLY)

Number of cylinders:	2
Maximum rpm:	6,000
Factory oil charge:	10 U.S. oz (295,7 ml)
Approved oil:	Capella E wax free or equivalent

A/C COMPRESSOR (CENTRAL SYSTEM)

Number of cylinders:	6
Operating speed:	400 to 2,200 rpm (1,750 rpm, nominal)
Minimum speed for lubrication:	400 rpm
Oil capacity:	1.13 U.S. gal. (4,3 liters)
Approved oils:	Calumet Refining Co. R030
	Texaco WF68
	Witco Chemical Corp. Suniso 4GS

NOTE: The above oils are suitable for use with reciprocating compressors using Freon R-12 and with evaporator temperatures above -40 °F (-40 °C).

OIL SPECIFICATIONS

Engine

Heavy-duty engine oil SAE-40 meeting MIL-L-2104D specification. Certain engine operating conditions may require exceptions to this recommendation. They are as follows:

1. For continuous high temperature operation (over 100 °F (38 °C) ambient or 200 °F (93 °C) coolant out), the use of a SAE grade 50 lubricant is recommended.

2. At ambient temperatures below freezing where starting aids are not available or at very cold temperatures (0 °F (-18 °C) to -25 °F (-32 °C)), the use of multiviscosity grade 15W-40 or monograde SAE 30 lubricants will improve startability.

Automatic transmission

The transmission must be filled with DEXRON or DEXRON II automatic transmission fluid.

Differential

Multigrade gear lubricants are recommended for use in drive axle. These lubricants perform well over broad temperature ranges, providing good gear and bearing protection in a variety of climates.

Two categories of multigrade gear lubricants may be used according to the climate in which you drive.

Climate	Lubricant
Northern	80W-90
Southern	85W-140

Fan gearbox

General purpose gear SAE-90 grade lubricant is recommended for the fan gearbox.

Power steering reservoir

This reservoir must be filled with "DEXRON" or "DEXRON II" automatic transmission oil.

Wheel bearings

The front and tag axle wheel bearings must be filled to the level mark in the cap using SAE 90 oil. Drive axle wheel bearings are lubricated by the differential oil. Maintain differential oil level to ensure adequate lubrication of drive axle wheel bearings at all times.

On vehicles equipped with grease-lubricated wheel bearings, pack with wheel bearing grease.

DDEC II DIAGNOSTIC CODES

To read codes:

Use a diagnostic data reader (not furnished by the manufacturer) or set the "DDEC TEST" switch to the "ON" position. This switch is located in the upper section of steering compartment. This latter method will illuminate the "Check engine" light located in dashboard, in a series of flashes separated by a pause. A code "43" consists of four flashes, followed by a short pause, then three flashes in quick succession.

Error Code #	Description	Error Code #	Description
11	Power Take-Off Sensor Lo Volt	38	Fuel Prs Sensor Lo Volt
12	Power Take-Off Sensor HI Volt	41	Timing Reference Sensor
13	Coolant Sensor Lo Volt	42	Synchronous Ref Sensor
14	Eng Temp Sensor Hi Volt	43	Low Coolant Level
15	Eng Temp Sensor Lo Volt	44	Engine Overtemperature
16	Coolant Sensor Hi Volt	45	Low Oil Pressure
21	Throttle Pos Sensor Hi Volt	46	Low Battery Voltage
22	Throttle Pos Sensor Lo Volt	47	Hi Fuel Pressure
23	Fuel Temp Sensor Hi Volt	48	Lo Fuel Pressure
24	Fuel Temp Sensor Lo Volt	51	EEPROM Error
25	No Codes	52	ECM - A/D Fail
26	Power Control Enabled	53	EEPROM Memory Failure
31	Fault On Auxiliary Output	54	Vehicle Speed Sensor
32	ECM Backup System Fail	55	Proprietory Comm. Link
33	Turbo Bst Sensor Hi Volt	56	ECM - A/D Fail
34	Turbo Bst Sensor Lo Volt	58	Cruise Ctl Switches
35	Oil Prs Sensor HI Volt	61-68	Inj Response Time Long
36	Oil Prs Sensor Lo Volt	71-78	Inj Response Time Short
37	Fuel Prs Sensor Hi Volt	85	Engine Overspeed

DDEC: Detroit Diesel Electronic Control

ECM: Electronic Control Module

EEPROM: Electrically Erasable Programmable Read-Only Memory

ATEC DIAGNOSTIC CODES

To read codes:

Use a diagnostic data reader (not furnished by the manufacturer) or set the "ATEC TEST" switch to the "ON" position. This switch is located in the upper section of steering compartment. This latter method will illuminate the "Check Trans" light in dashboard, in a series of flashes separated by a pause. A code "12" consists of one flash, followed by a short pause, then two flashes in quick succession.

Diagnostic codes and system response for 6/700 series Allison Transmission Electronic Control

Code	Description	DO NOT Shift Light	Transmission Response	Clearing the "CHECK TRANS"
12	Low fluid pressure/level	OFF	Inhibits high gear	Next valid lube pressure/level
13	Low input voltage: in neutral	ON+	Hold in neutral	Acceptable volts
	in range	OFF	May not shift	Not turned on
14	Forward pressure switch	OFF	Normal operation	Next valid signal
15	Reverse pressure switch	OFF	Normal operation	Next valid signal
21	Throttle sensor, in error zone	OFF	Full throttle assumed	ECU power OFF/ON
22	Speed sensor	ON+	Drop LU & hold in gear	ECU power OFF/ON
23	Shift selector (primary)	OFF	Hold in last range	Next valid range
24	Fluid temperature:			
	cold (below -25F) No Code	ON+	Hold in neutral	Temp above -32C
	cool (-25 to 20F) No Code	OFF	Inhibits upshifts	Not turned on
	hot (above 270F)	OFF	Inhibits high gear	Temp below 132C
31	Shift selector (secondary)	OFF	Hold in last range	Next valid range
32	Wrong direction signal	OFF	Shift to neutral	Select neutral
33	Temp. sensor, in error zone	OFF	Normal operation	Next valid temp
34	PROM check	ON+	Drop LU & hold in gear	ECU power OFF/ON
41	J solenoid (neutral) on test			
	Below specified output rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified ouput rpm*	ON+	Drop LU & hold in gear	ECU power OFF/ON
42	F solenoid (fwd/rev) on test			
	Below specified ouput rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified output rpm*	ON+	Drop LU & hold in gear	ECU power OFF/ON
43	D solenoid on test			
	Below specified output rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified output rpm*	ON+	Drop LU & hold in gear	ECU power OFF/ON
44	C solenoid on test			
	Below specified output rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified output rpm*	ON+	Drop LU & hold in gear	ECU power OFF/ON

Code	Description	DO NOT Shift Light	Transmission Response	Clearing the "CHECK TRANS"
45	B solenoid on test			
	Below specified output rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified output rpm*	ON+	Drop LU & hold in gear	ECU power OFF/ON
46	A solenoid on test			
	Below specified output rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified output rpm*	ON+	Drop LU & hold in gear	ECU power OFF/ON
51	G solenoid (lockup)	OFF	Possible loss of lockup	Valid signal
52	E solenoid (trim boost)	OFF	Possible full trim boost	Valid signal
53	H solenoid (neutral)			
	On test	OFF	May not shift	ECU power OFF/ON
	Off test	ON+	Drop LU & hold in gear	ECU power OFF/ON
54	A,B,C,D,F & J solenoids off test	ON+	Drop LU & hold in gear	ECU power OFF/ON
66	Bi-directional comm. link	ON+	No modulation of shifts	Valid BDCL signal
69	Electronic control unit test	ON+	Drop LU & hold in gear	ECU power OFF/ON

Notes:

1) For all errors, the "CHECK TRANS" light will illuminate immediatly.

2) Except for Codes "22 and 69", lockup clutch will not be dropped until the retarder or compression brake (if used) shuts off.

3) Engine restart will usually turn ECU power OFF/ON.

*** Speed specified by transmission.**

+ In lever shift selectors and push button selectors built after September 1986, the "DO NOT SHIFT" light will flash. Prior push button shift selectors gave a constant light.

LIGHT BULB DATA

APPLICATION	PREVOST PART NO.	TRADE OR SAE NUMBER	WATTS OR CANDLE POWER	VOLTS	QTY
EXTERIOR LIGHTING					
Hi-beam, headlight	56-1198	H4651	50 W	12	2
Lo-beam, headlight	56-1199	H4656	35 W	12	2
Fog light	56-1263	H-3	70 W	24	2
Docking & cornering light	56-1263	H-3	70 W	24	4
Front directional light	56-0773	HELLA	21 W	24	2
Front identification light	56-1166	464	3 cp	24	3
Front clearance light	56-1166	464	3 cp	24	2
Side directional light	56-0601	456	2 cp	24	12
Side marker light	56-0601	456	2 cp	24	12
Rear identification light	56-1166	464	3 cp	24	3
Rear clearance light	56-1166	464	3 cp	24	2
Rear directional light	56-1900	HELLA	21 W	24	2
Stoplight	56-1900	HELLA	21 W	24	2
Center stoplight	56-1900	HELLA	21 W	24	1
Taillight	56-1553	HELLA	10 W	24	4
Back-up light	56-1900	HELLA	21 W	24	2
License plate light (sealed type)	93-0209	---	---	24	1
Baggage compt. light	56-0601	456	2 cp	24	28*
Engine compt. light	56-0601	456	2 cp	24	6
Front electric compt. light	56-0601	456	2 cp	24	2
Steering compt. light	56-0131	307	21 cp	24	1
INTERIOR LIGHTING					
Driver's light	56-0132	308	21 cp	24	2
Speedometer light	56-2112	1864	3 cp	24	1
Tachometer light	56-2112	1864	3 cp	24	1
Turbo boost gauge light	56-1167	3899 (Osram)	3 W	24	1
Other gauge light-1/unit	56-0144	1820	1.6 cp	24	AR
Check engine warning light	56-2048	E-9 (Norma)	2 W	12	1
Stop engine warning light	56-2048	E-9 (Norma)	2 W	12	1
Check trans. warning light	56-2049	Osram	2 W	24	1
Indicator & warning light-1/unit	56-1122	3797 (Osram)	2 W	24	AR
Switch light-1/unit	56-1123	2741 (Osram)	1 W	24	AR
R.H. console control nomenclature bulb	56-0472	327	.34 cp	24	4**

NOTE: No bulb is required in the pyrometer gauge.

* Quantity of 24 for vehicle equipped with central A/C & heating system.

** Quantity of 6 for vehicle equipped with central A/C & heating system.

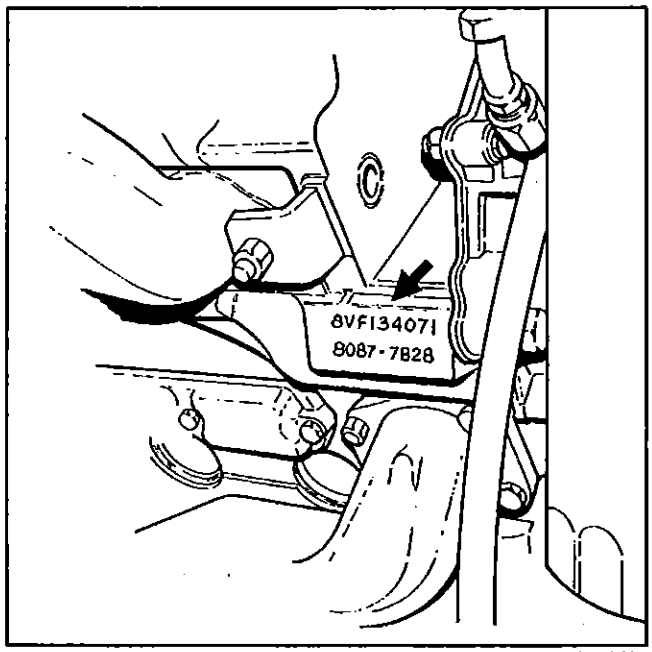
DATA PLATE & CERTIFICATION

Data plate

The main components of the vehicle such as engine, transmission, axles and chassis are identified by different serial numbers. It may be necessary to locate these numbers for warranty purposes.

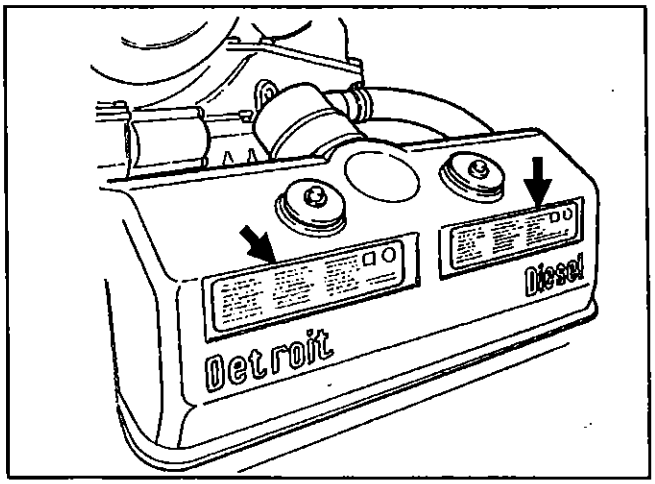
Engine

The engine number is stamped on the cylinder block under the exhaust manifold (oil filter side) close to the water pump.



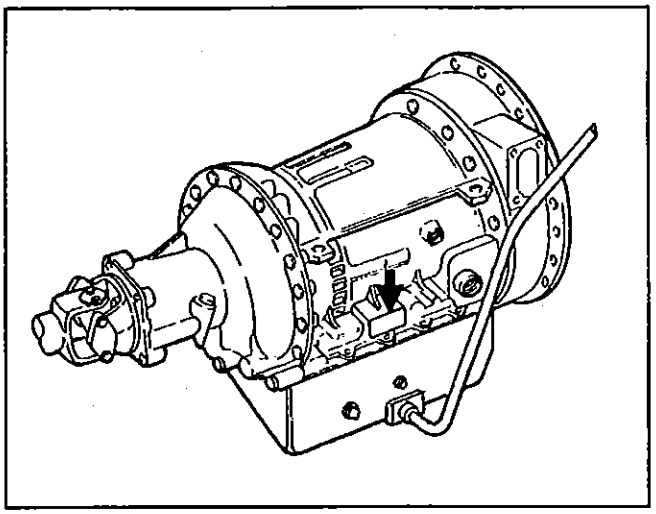
OEMX0502

In addition, two option plates made of laminated paper are located on the rocker cover (starter side). Contents of the option plates include the engine serial and model numbers and a list of the optional equipment on the engine. The information is primarily for use when ordering replacement parts.



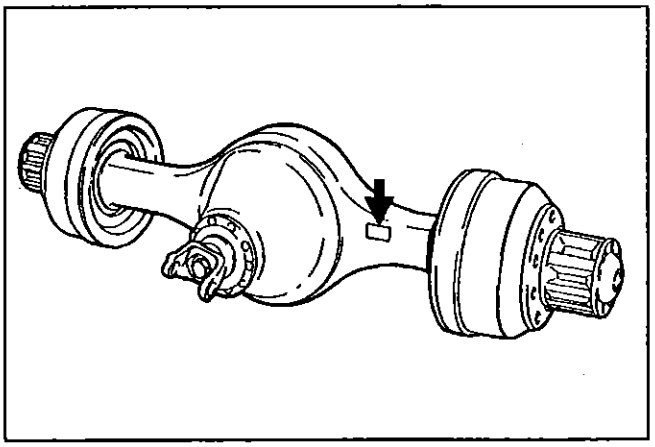
OEMX0503

Transmission



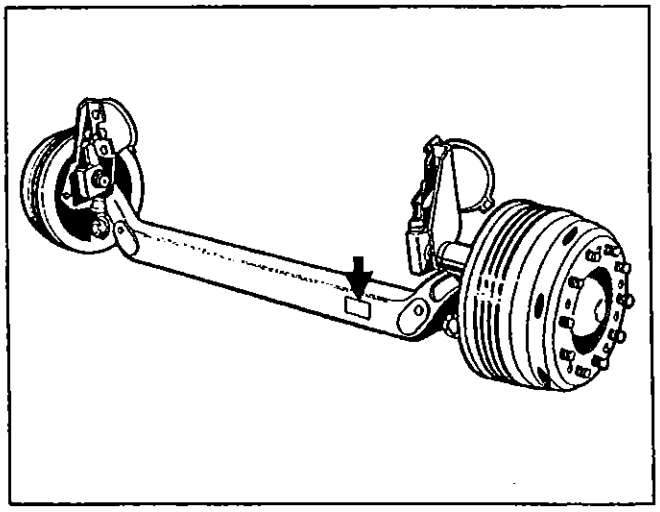
OEMX0504

Drive axle



OEMX0505

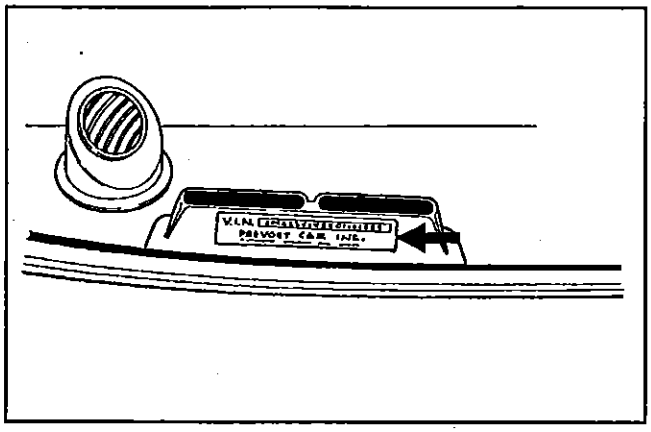
Front axle



OEMX0506

V.I.N.

The vehicle identification number is stamped on a plate located on dashboard louver (entrance door side), so that it is visible from the outside through the windshield. It is extremely important to give the correct vehicle identification number when ordering replacements parts. Use of these numbers will prevent delay and errors in obtaining the correct material.



OEMX0507

NOTE: We strongly recommend that you take note of all the serial numbers on the vehicle and supply them to your insurance company. They may be useful.

Coach final record

This is a complete and detailed record of all data pertaining to the assembly of the vehicle. This information sheet is included in the technical publication box delivered with the new vehicle and should be kept in vehicle where it will be readily available for references.

Safety attestation

All the components on this vehicle meet the government requirements:

- Material and parts conform to A.S.T.M. and/or S.A.E. standards in effect at time of manufacturing.

- Welding is in accordance with Canadian and U.S. standards.

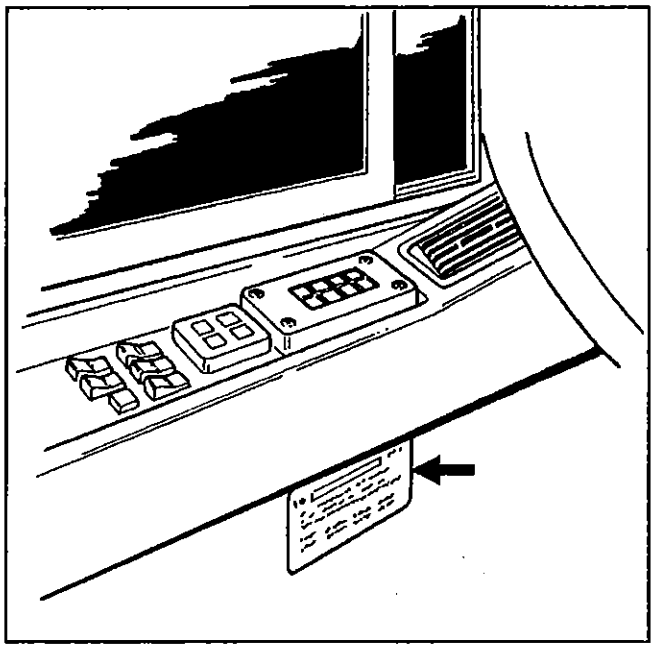
- All factory-installed interior materials meet F.M.V.S.S. 302 on fire resistance.

- Certified according to Provincial, State and Federal Safety standards (Can. & U.S.) B.M.C.S.S., F.M.V.S.S., C.M.V.S.S.

Other certification labels are affixed to the specific components on the vehicle.

D.O.T. certification label

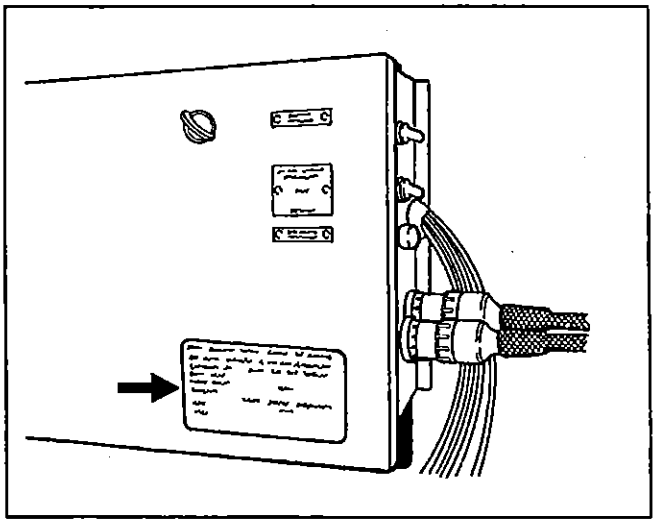
This is your assurance that your new vehicle complies with all applicable Federal Motor Vehicle Safety Standards which were in effect at the time the vehicle was manufactured. You can find this label on the wall at the L.H. side of driver's seat, under the side control panel.



OEMX0508

E.P.A. engine label

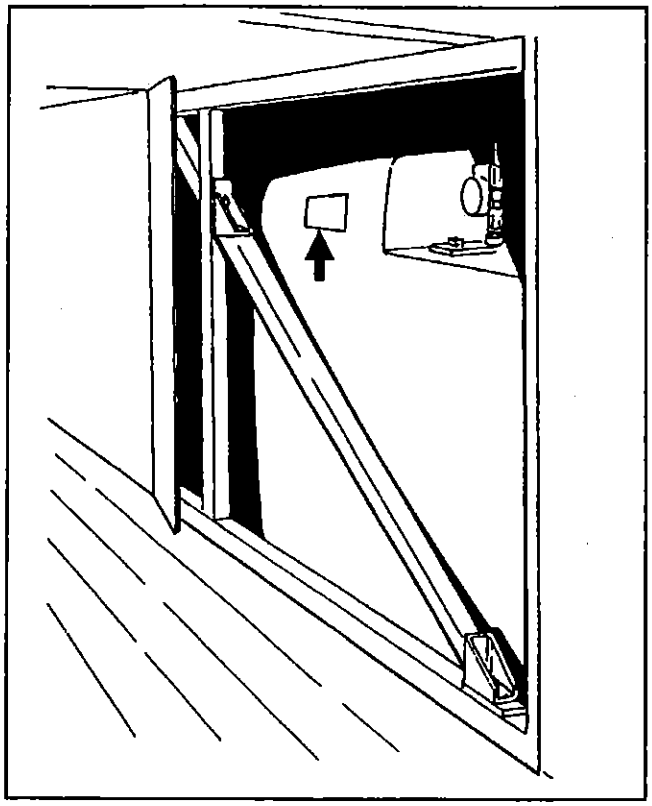
The exhaust emission certification label affixed on the lower R.H. side corner of the rear junction box certifies that the engine conforms to federal and any state exhaust emission regulations. It gives the operating conditions at which certification was made.



OEMX0401

Fuel tank label

The fuel tank label is affixed on side of fuel tank. To read this label, open the last baggage compartment door, locate the fuel tank access panel then remove it by unscrewing the Phillips head retaining screws.



OEMX0510

NOTE: Optional auxiliary fuel tank has a label affixed to the side of the tank and can be easily read by opening the second baggage compartment door.

CARE & MAINTENANCE

INTERIOR CLEANING

Most of the interior of your vehicle was installed by the Interior Designer and Systems Manufacturer who completed your vehicle. Refer to them for correct maintenance and cleaning of the components they installed.

For the maintenance and cleaning of the materials used by Prevost for the inside of your motorcoach, refer to the following instructions.

Plastic and vinyl

Use a clean, damp cloth or sponge to keep trim free from dust. For other soilage, use a lukewarm all purpose cleaning solution or a mild saddle soap for vinyl trim. Remove water spots and soap traces with a clean, damp cloth or sponge. Use a clean, soft cloth to rub dry.

Grease, tar or oil stains can be removed with a clean cloth or sponge soaked with all purpose cleaner or with a solvent-type vinyl cleaning agent.

Occasionally, apply a colorless vinyl or leather preservative to retain the material luster and pliability.

Window

To clean inside surface of the windows, use a commercial glass cleaner or a 10 to 1 mix of water and white vinegar. Keep all the windows clean for maximum visibility.

Rubber components

Should be treated only with pure water or glycerin.

Pressure laminates

Normal maintenance consists in wiping surfaces with a damp cloth and detergent. Remove spillage at once to minimize any permanent stain.

To remove stains, first try cleaning the affected area with a household detergent, methylated spirits or mineral turpentine. If stain is still present, try a mild abrasive and water solution.

Stainless steel

Use a stainless steel cleaner available at any automotive washing and cleaning specialist (or order Prevost part # 68-0356) and follow manufacturer's instructions.

EXTERIOR CLEANING

The paint on your vehicle is very durable, but must be protected from losing its luster due to exterior conditions. Therefore, wash and wax your vehicle often. The longer the dirt is left on the paint, the greater the risk of damaging the glossy finish, either by scratching if the dirt is rubbed into the paint, or simply by the chemical effect dirt particles have on the paint surface.

Begin by spraying water over the entire coach to remove all loose dirt, then wash with a car washing-soap in the concentration recommended by the manufacturer. Rinse afterwards with a generous stream of water.

The vehicle paintwork needs polishing or preserving when water no longer forms droplets on the surface.

CAUTION: Do not use hot water. Lukewarm to cool water is less harmful for the paint. Do not use any solution that can damage the body paint.

Do not aim the water jet directly into openings such as the A/C & heating compartment door grille to avoid water penetration in the fresh air intake duct. If the water jet is under high pressure, avoid aiming the jet directly on condenser and radiator doors as the fins of cores may be damaged.

Do not wash or wax your vehicle in direct sunlight.

The underside of the vehicle picks up dirt and road salt used to keep streets and highways free of snow and ice. To protect against corrosion, it is important to remove mud, debris and road salt from the underside with a powerful water jet. Be sure to include the wheelhousings, bumpers, muffler, tailpipe and brackets. This should be done twice a year and is best accomplished after the vehicle has been driven through a heavy rain. The exterior of the coach, engine, engine compartment, aluminum wheels and mirrors should always be washed as soon as possible after accumulating road salt. Let engine and exhaust cool down before washing.

Tar or oil

Do not allow tar or oil to remain on the paint. Remove as soon as possible with tar remover or you may use turpentine. After applying any cleaning fluid, always wash with a lukewarm soap and water solution and apply a new coat of wax.

Insects

Remove as soon as possible with a lukewarm soap and water solution or insect remover.

Tree sap

Do not allow tree sap or bird droppings to harden on the paint. Remove with a lukewarm soap and water solution.

Window

Keep silicone sprays off the windshield to avoid wiper smear in rain. Clean all windows regularly to remove road film and bus-wash wax buildup. Use a lukewarm soap and water solution or an alcohol-based cleaning agent. If a chamois is used for polishing the glass, it should be used exclusively for that purpose.

Wiper blades

If wiper blades are frozen, remove ice gently by hand to avoid blade damage. Remove all wiper blades periodically and clean them thoroughly with an alcohol-based solution. Use a sponge or soft cloth and wipe lengthwise. Replace wiper blades if they are damaged or do not clean well.

OIL VERIFICATION

Engine oil level

Ideally, check engine oil level when oil is warm with vehicle on a level surface, as for instance during every fuel filling. First, stop engine and wait at least 10 minutes for the oil to drain back into the oil pan. Then, pull out the dipstick, wipe clean, reinsert the dipstick and note the oil level.

Maintain the oil level between the two marks on the dipstick, and never allow it to drop below the "L" mark. If required, add oil from the oil reserve tank by opening the tank valve and observing the oil level change in the sight glass, then check oil level again. No advantage is gained by having oil level above the "F" mark. Do not forget to shut off oil reserve tank valve as too much oil can be harmful for the engine.

OEMX0601

NOTE: The location of the engine oil dipstick and engine oil reserve tank are illustrated on the figure on page 2-20.

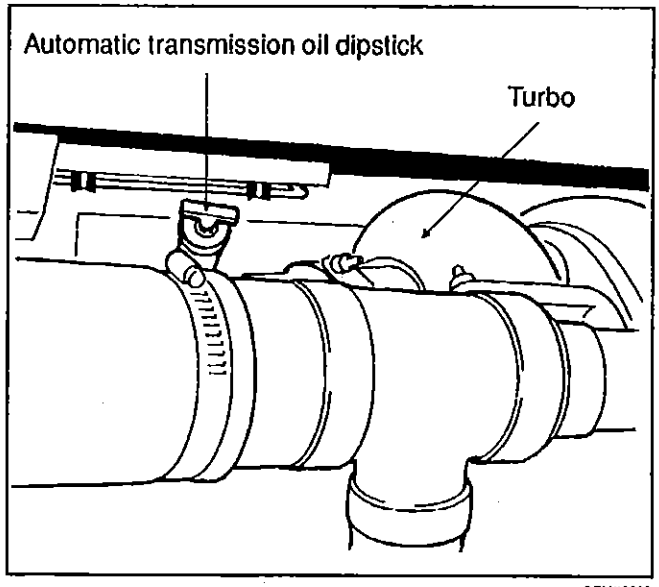
Automatic transmission oil level

Oil level check procedure

Two checks must be made to ensure proper oil level in the transmission if there is any question that the oil level might be very low. A *"COLD CHECK"* must be made when the transmission oil temperature ranges between 60 and 140 °F (16-60 °C). This cold check is required to determine if the transmission has enough oil to be safely operated until a hot check can be made. A *"HOT CHECK"* must be made when the transmission oil reaches normal operating temperature (160-250 °F; 70-120 °C). This check is required to ensure that the oil is at the proper operating level.

Park vehicle on a level surface. Apply the parking brake and operate the engine at 1000-1200 rpm for approximately one minute to purge air from the system. Allow engine to idle, then fill clutch cavities and circuits by shifting the transmission into Drive and then Reverse. Shift to Neutral.

The automatic transmission oil dipstick is located between the rear junction box and the top of the engine. Before removing dipstick, clean around the end of the fill tube. Dirt and foreign matter should not be allowed to enter the oil system since this could cause valves to stick, thus resulting in undue wear of transmission parts, or clogged passages. To remove the dipstick, unscrew the twist cap about three (3) turns and pull out the dipstick.



OEMX0602

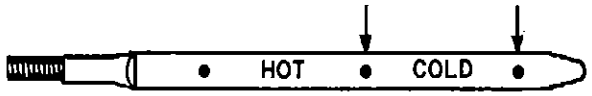
WARNING: When checking oil level, special care must be taken not to touch the engine coolant tubing and/or the engine exhaust pipe, as this could cause severe burns.

Do not wear loose clothings and stay away from rotating parts during oil verification. Personal injury could occur.

Cold check

Run the engine until the transmission oil temperature ranges between 60 and 140 °F (16-60 °C). With the engine idling, parking brake applied and the transmission in Neutral, wipe the dipstick clean and check the oil level. If the oil level registers in the *COLD RUN* band, the quantity of oil in the transmission is sufficient to operate the vehicle until normal operating temperature (160-250 °F; 70-120 °C) is reached. If the oil level registers on or below the bottom line of the *COLD RUN* band, add oil to bring the level within the band. If the oil level registers above the *COLD RUN* band, drain oil to bring the level within the band. Then operate the vehicle and make a *HOT CHECK* when normal operating temperature is reached.

CAUTION: The oil level rises as oil temperature increases. Do not fill above the *COLD RUN* band before the transmission reaches normal operating temperature.

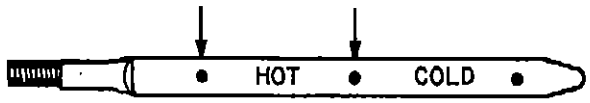


OEMX0603

Hot check

Be sure the oil temperature ranges between 160 and 250 °F (70-120 °C). With the engine idling, shift into forward and reverse as previously described, then put transmission in Neutral and apply parking brake, remove the dipstick from the oil filler tube and check the oil level. If the oil level registers in the *HOT RUN* band, the quantity of oil in the transmission is safe for operating the vehicle. If it registers on or below the bottom line of the *HOT RUN* band, add the required amount of oil necessary to bring the oil level to the middle of the *HOT RUN* band. (Approximately one (1) quart (0,9 liter) of oil is required to raise the oil level from the bottom line of the *HOT RUN* band to the middle of the *HOT RUN* band). After replacing the dipstick, turn handle several turns clockwise to tighten the rubber seal.

CAUTION: Never overfill the transmission as this can cause overheating and other problems.



OEMX0604

Power steering oil level

Your vehicle is equipped with an integrated power steering system. The power steering fluid reservoir is on the upper left-hand side of the engine compartment. To check fluid level, proceed as follows:

1. Stop engine, and open both engine rear doors.
2. Remove dipstick and wipe with a clean rag.
3. Insert dipstick in reservoir, then remove it again to check mark.
4. Adjust level to *"FULL"* mark, using only *"DEXRON"* automatic transmission fluid.

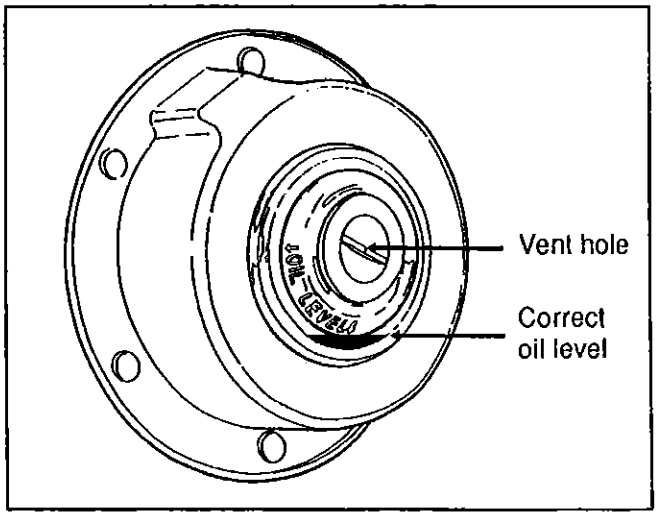
Fan gearbox oil level

The radiator fan is belt driven from the engine crankshaft pulley through a drive shaft and a gearbox. The gearbox is equipped with a knurled knob dipstick, which is close fitted on top, to allow oil level verification. Check oil level with the engine stopped and be sure that all engine stopping safety precautions have been observed. Maintain the oil level between the marks on the dipstick and if adding is necessary, use SAE 90 general purpose lubricant.

Wheel bearing oil level

The oil level for the front and tag axle wheel bearings must be maintained to the level mark in the cap. The level is determined by a line, indicated by arrows, that is incorporated to the plastic lense and passes underneath the words "OIL LEVEL". To check oil level after vehicle has been driven, wait at least 15 minutes to ensure that oil has settled. Drive axle wheel bearings are lubricated by the differential oil. Maintain differential oil level to ensure adequate lubrication of drive axle wheel bearings at all times.

On vehicles equipped with grease-lubricated wheel bearings, pack with wheel bearing grease.



OEMX0605.PCX

CAUTION: Wheel bearing oil fill cap is provided with a very small vent hole in its center. Insert occasionally a small tip to avoid hole restriction, as it prevents overpressure in bearing housing.

COOLANT LEVEL VERIFICATION

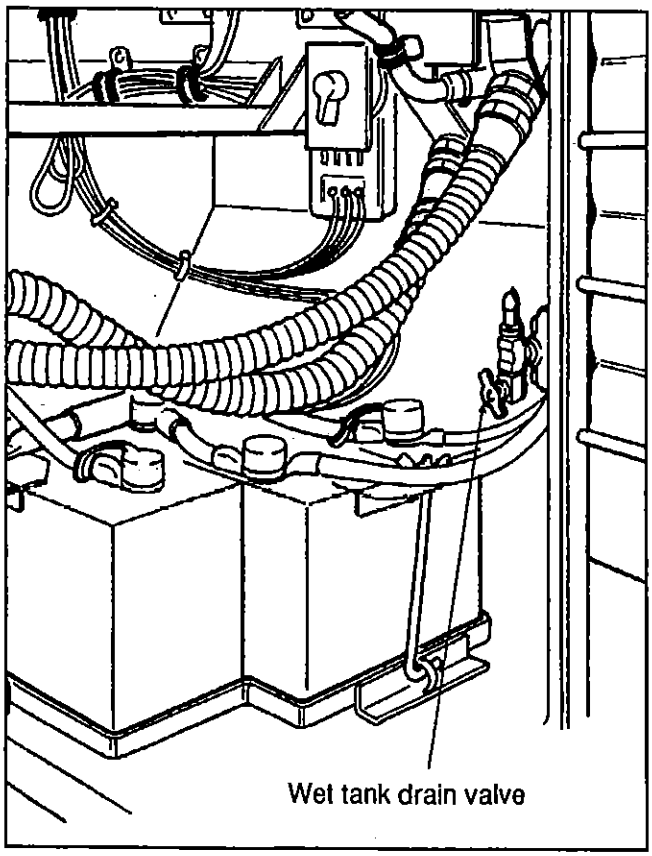
The cooling system is completely filled when the coolant (cold) is visible in the sight glass of the surge tank. If topping-up is necessary, fill the system with the same mixture ratio already used in the system.

WARNING: Hot engine coolant is under pressure. Never remove cap when coolant is hot as severe burns can result. Allow engine to cool before checking coolant level.

AIR TANKS

Your vehicle is provided with four (4) air tanks; the accessories and wet tanks must be purged every 3 - 4,000 miles (5 - 6 500 km), while the primary and secondary air tanks must be purged each time the oil and filters are changed (maximum 10,000 miles (16 000 km)).

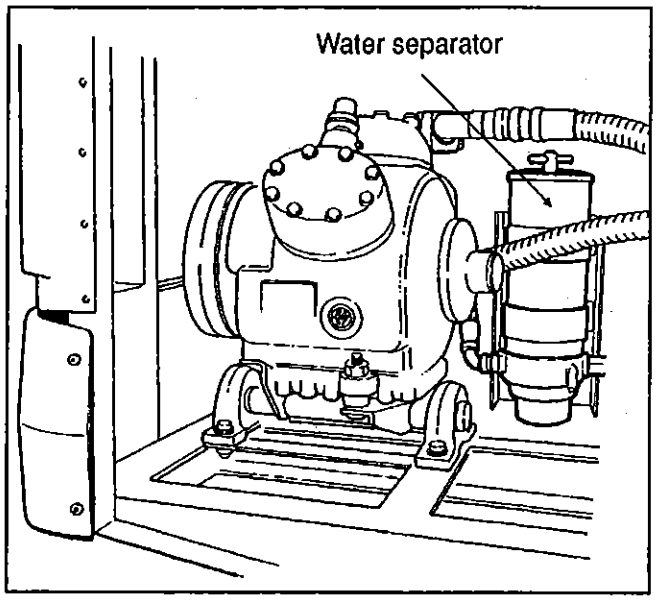
The accessory air tank is installed in steering compartment, a drain valve being provided at bottom of the tank. The three (3) other tanks installed under the vehicle, are provided each with a drain valve underneath the tank. For location, refer to the figure in *"Lubrication and servicing schedule"* later in this section. To ease routine maintenance of the wet tank, an additional drain valve is connected to this tank and is installed over the batteries in engine compartment and is accessible by opening R.H. side door.



OEMX0606

WATER SEPARATOR

A fuel filter/water separator is installed in engine compartment close to the battery installation, to prevent water infiltration in engine fuel system. It should be drained periodically, or when the water separator indicator lamp lights in dashboard. Loosen bleed screw below separator one quarter of a turn to drain.



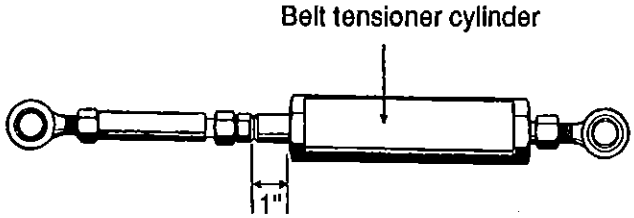
OEMX0607

BELT TENSIONERS

The air-operated belt tensioners on central A/C compressor and radiator fan transfer are standard equipment on vehicles equipped with the central A/C and heating system. However, an optional air-operated belt tensioner may have been installed on radiator fan transfer on vehicle without central A/C and heating system.

Air-operated type

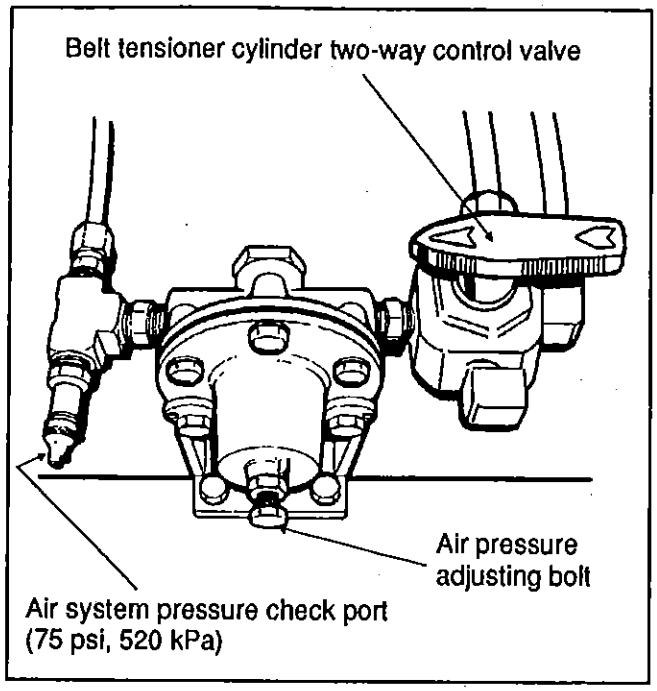
Belt tension is provided by an air cylinder regulated at 75 psi (520 kPa), which is adjusted by an air pressure regulating valve mounted in engine compartment above the doors. For proper operation of the air cylinder, adjust the air cylinder rod to provide a 1" (25 mm) extension with the pneumatic system under normal pressure and the pressure regulating valve set at 75 psi (520 kPa).



Recommended operating length

OEMX0608

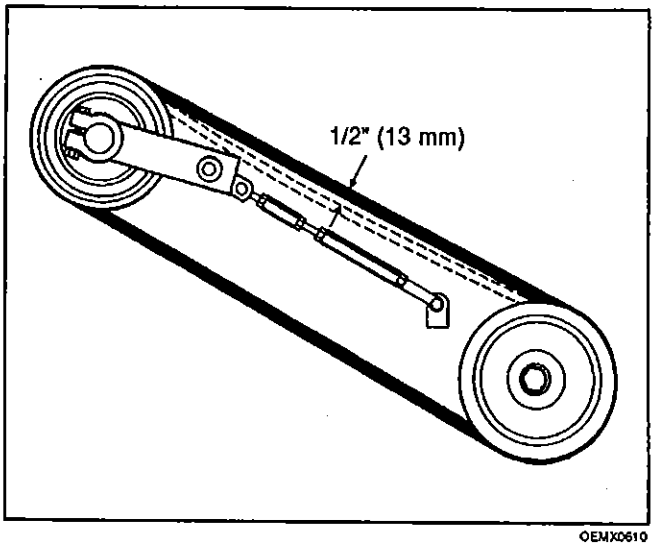
For belt remplacement, air pressure must be released from belt tensioners by means of the two-way control valve. This valve mounted above the engine doors close to the pressure regulating valve, is manually operated. Before handling, be sure that all engine stopping safety precautions have been observed.



OEMX0609

Manually adjustable type

This type of belt tensioner should be adjusted according to the following illustration.



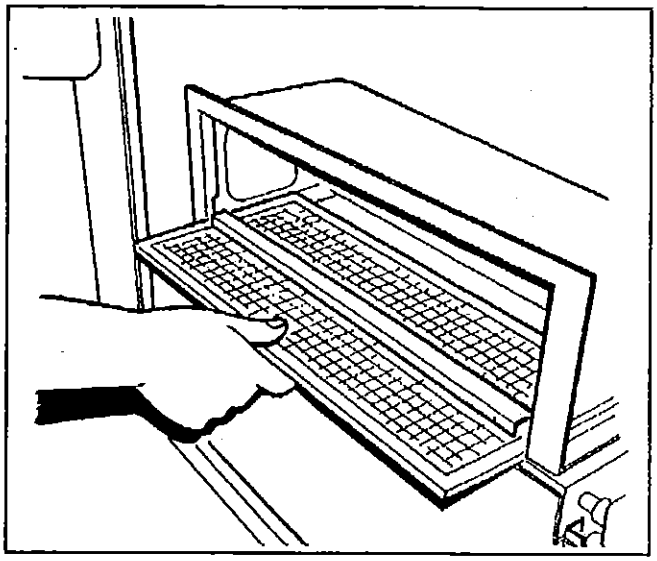
OEMX0610

A/C AND HEATING AIR FILTERS

For maximum air conditioning and heating system efficiency, air filters should be inspected and cleaned as required in maintenance schedule to ensure proper ventilation of the evaporator and heating radiator cores.

Driver's system

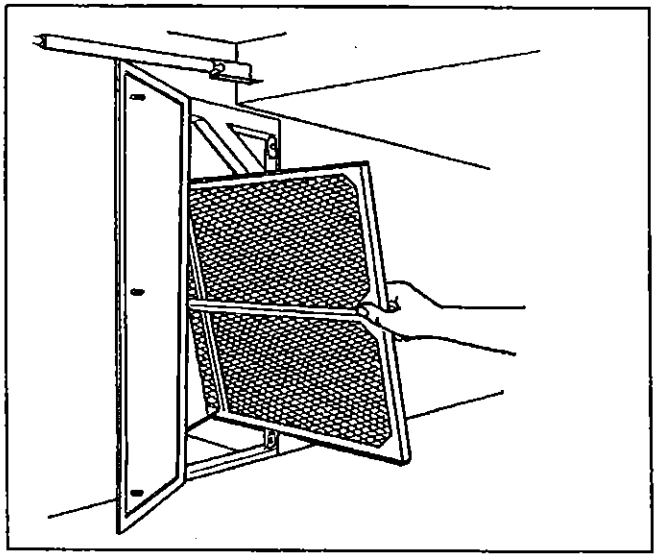
Air filter for driver's system is located under dashboard. To gain access, turn counterclockwise both 3/4 turn knurled fasteners of A/C and heating unit access panel, then lift and remove panel.



OEMX0611

Central system

Two air filters are used for the central system and are located in the A/C and heating compartment. To gain access, open the rearmost baggage compartment door, open the air filter access panel by unscrewing the three (3) retaining screws, then slide out both filters as a unit.



OEMX0612

On some vehicles, it may be impossible to remove air filters from the rearmost baggage compartment, as different systems may have been installed by the Interior Designer and Systems Manufacturer; in such a case, remove air filters from the second baggage compartment as outlined hereafter.

Open the second L.H. side baggage compartment door, then open the air filter access panel by unscrewing the three (3) retaining screws. Remove the wave pin retaining the two filter sections together, open the latch, separate the filters by pushing the upper filter base away from evaporator core until upper filter top is released from its retaining channel in the support.

Slide out upper filter carefully by the opening, then remove lower filter through the same opening.

FLEXIBLE HOSE MAINTENANCE

The performances of engine and equipment are greatly related to the ability of flexible hoses to supply lubricating oil, air, coolant, and fuel oil. Maintenance of hoses is an important step to ensure efficient, economical, and safe operation of the engine and related equipment.

Pre-starting inspection

Inspect hoses for leaks, and check all fittings, clamps, and ties carefully. Ensure that hoses are not resting on or touching shafts, couplings, heated surfaces including exhaust manifolds, any sharp edges, or other obviously damaging areas. Since any machinery vibrates and moves to a certain extent, clamps and ties can fatigue with time. To ensure proper support, inspect fasteners frequently and tighten or replace them as necessary.

Leaks

Investigate leaks immediately to determine if fittings have loosened or cracked, and also if hoses have ruptured or worn through. Take corrective action immediately. Leaks are not only potentially detrimental to machine operation, but can also result in added expenses caused by the need to replace lost fluids.

WARNING: Personal injury and/or property damage may result from fire due to the leakage of flammable fluids, such as fuel or lubricating oil.

Service life

A hose has a limited service life which is controlled by many factors. With this in mind, it is recommended that all hoses be thoroughly inspected annually. Look for surface damage or indications of twisted, worn, crimped, brittled, cracked, or leaking lines. Hoses having the outer surface worn through or a damaged metal reinforcement should be considered unfit for further service.

It is also recommended that all hoses in this vehicle be replaced during major overhaul and/or after a maximum of five service years. Replacement hose assemblies should always be at least equal to the O.E.M. equipment.

LUBRICATION

A lubrication chart is included in this section to give location of key service points on the vehicle. Where cleaning, removal or disassembly are required for lubrication purposes, these procedures are covered in the applicable sections of this manual.

Lubrication intervals are based on recommendations for normal operating conditions. Where more severe service is encountered, more frequent attention will be required.

FIRST SERVICE ON NEW VEHICLE

Differential oil

Factory-filled oil in differential on new vehicle should be drained and refilled after 1,000 miles (1 600 km) and no more than 3,000 miles (4 800 km) of initial operation, then according to the lubrication and servicing schedule.

Coolant strainer

The coolant strainer is designed to recover the soldering residues trapped inside the coolant lines during their initial assembly; perform initial cleaning once vehicle has run approximately 3,000 miles (4 800 km), then according to the lubrication and servicing schedule.

NOTE: If additional soldering has been performed on any points of coolant piping, clean coolant system strainer as outlined on new vehicle (3,000 miles (4 800 km)).

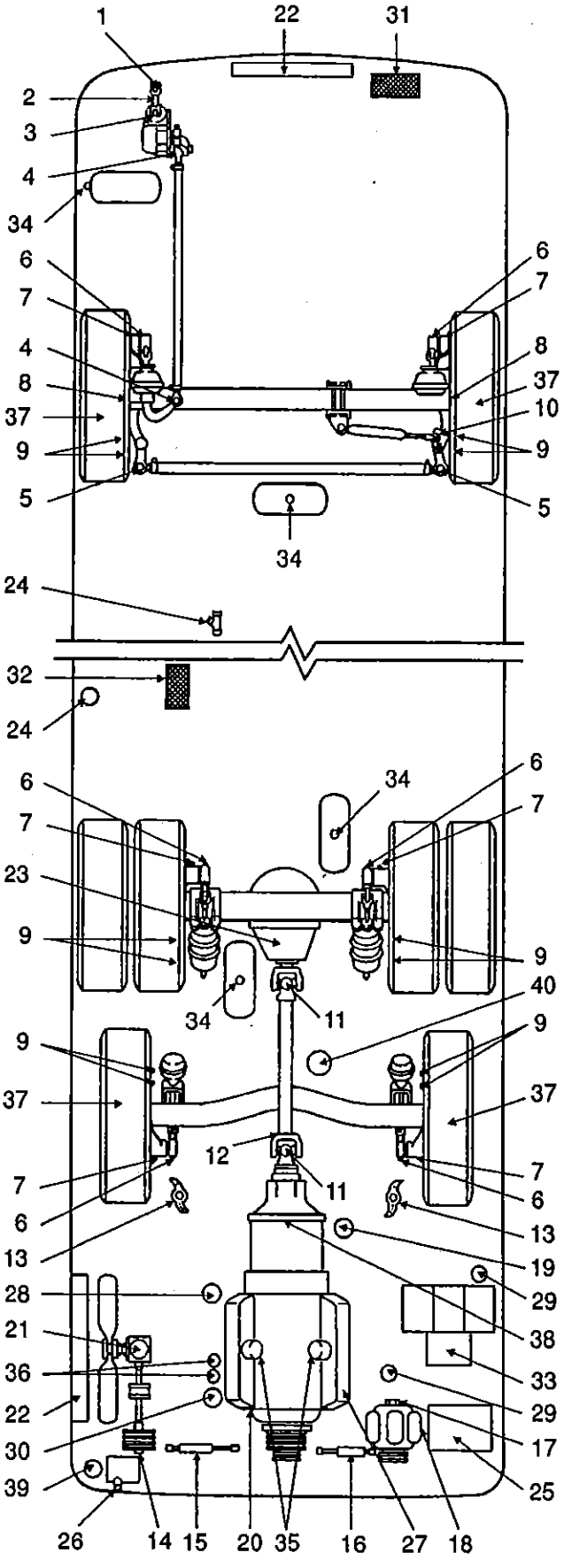
Automatic transmission oil filter

Change cartridge after first 5,000 miles (8 000 km), then after each 25,000 miles (40 000 km) as specified in the lubrication and servicing schedule.

Engine oil

Since engine break-in has been done in factory, there is no special break-in, so oil should be changed according to the lubrication and servicing schedule intervals.

LUBRICATION AND SERVICING SCHEDULE



OEMX0613

The following code and notes apply to the service intervals listed in chart on the two (2) next pages.

RECOMMENDED LUBRICANT CODE

G-1 General purpose gear lubricant SAE 90 (A.P.I. spec. GL5)

L-1 High melting point, water resistant, lithium-base grease

L-2 Molybdenum disulphide grease

O-2 Dexron or Dexron II automatic transmission oil

S-1 Special "KYSOR" shutterstat fluid

W-2 Ethylene glycol permanent type antifreeze solution (absolutely must be low silicate type). No less than 50% antifreeze and no more than 60% antifreeze should be used.

NOTES

1. Only one belt tensioner cylinder rod end is provided with a grease fitting on model that is not *"air-operated"*.

2. Check oil level in A/C compressor sight glass on vehicles equipped with central A/C system; refer to a specialist for vehicles equipped with driver's A/C system compressor.

3. Use ONLY approved oils; refer to the list in the *"SPECIFICATIONS"* section of this manual under heading *"A/C Compressor"*.

4. Check for the appropriate grade of lubricant to be used according to climate in the *"SPECIFICATIONS"* section of this manual under heading *"Oil Specifications"*.

5. On vehicles equipped with the central A/C and heating system, a coolant filter is located in the evaporator and heating compartment. Vehicles with the driver's system only have a strainer located at the top of the second compartment.

6. It is very important to keep surge tank coolant to the proper level. If coolant level becomes too low, a coolant sensor will inform the DDEC module which will shut off the engine. For proper level, refer to previous heading *"Coolant level verification"* in this section.

7. Check for the appropriate grade of lubricant to be used according to climate in the *"SPECIFICATIONS"* section of this manual under heading *"Oil Specifications"*.

8. For vehicles equipped with the optional *"RACOR"* fuel filter/water separator, change cartridge element every 25,000 miles (40 000 km).

9. For proper service, refer to previous heading *"Air Tanks"* in this section.

10. On vehicles equipped with grease-lubricated wheel bearings, clean and inspect bearings. Pack with wheel bearing grease.

1) BEFORE OPERATING VEHICLE, PERFORM EACH POINT LISTED IN *"MINOR DEFECTS & DRIVING HINTS"* SECTION UNDER HEADING *"ROUTINE INSPECTION "*

NOTE: Perform the first service items on new vehicle as outlined on the previous page.

2) SERVICE EVERY 5,000 MILES (8 000 km) OR TWICE A YEAR, WHICHEVER OCCURS FIRST

Item	Description	Remarks	Lubricant
1	Upper Steering Column U-joint	1 fitting	L-2
2	Steering Column Slip joint	1 fitting	L-2
3	Lower Steering Column U-joint	1 fitting	L-2
4	Steering Drag Link Ends	1 fitting on each end	L-2
5	Steering Tie Rod Ends	1 fitting on each end	L-2
6	Slack Adjusters (all wheels)	1 fitting/adjuster	L-2
7	Brake Camshafts (all wheels)	1 fitting/camshaft	L-2
8	Steering Knuckle Pins	2 fittings/knuckle	L-2
9	Brake Shoe Anchor Pins (all wheels)	2 fittings/brake	L-2
10	Steering Damper End	1 fitting	L-2
11	Propeller Shaft U-joints	2 fittings/U-joint	L-2
12	Propeller Shaft Slip Joint	1 fitting	L-2
13	Tag Axle Lever Pivot	1 fitting/pivot	L-2
14	Fan Pulley Bearing	1 fitting	L-1
15	Belt Tensioner Cylinder Rod Ends (fan)	1 fitting on each end (see note 1)	L-2
16	Belt Tensioner Cylinder Rod Ends (central A/C system compressor)	1 fitting on each end	L-2
17	Pillow Block of Central A/C System Compressor Support	2 fittings	L-2
18	Air Conditioning Compressor	Check oil level (see note 2)	(see note 3)
19	Automatic Transmission Oil Filter	Change cartridge after first 5,000 miles (8 000 km), then after each 25,000 miles (40 000 km)	-----
20	Shutterstat	Disconnect upper air line - inject a few drops of oil	S-1
21	Fan Gearbox Oil Level	Maintain level between the two marks on the dipstick	G-1
22	Lubricate Shutter Rods and Cranks	Apply	O-2
23	Differential Oil	Drain and refill differential; break-in period between 1,000 and 3,000 miles (1 600 and 4 800 km), then after each 25,000 miles (40 000 km) To level of filler plug 5,000 miles (8 000 km)	(see note 4)
24	Coolant Filter (strainer)	Clean strainer after first 3,000 miles (5 000 km), then after each 50,000 miles (80 000 km) (see note 5)	-----
25	Air Cleaner (dry type)	Inspect and clean, replace element if required	-----
26	Coolant Surge Tank	Use to add coolant (see note 6)	W-2

3) SERVICE EVERY 10,000 MILES (16 000 km) OR ONCE A YEAR, WHICHEVER OCCURS FIRST

Item	Description	Remarks	Lubricant
27	Engine Oil	Drain and refill	(see note 7)
28	Engine Oil Filter	Change cartridge	Fill with engine oil
29	Primary Fuel Filter	Change cartridge (see note 8)	Fill with clean fuel
30	Secondary Fuel Filter	Change cartridge	Fill with clean fuel
31	Driver's A/C and Heating Unit Air Filter	Clean or replace	-----
32	Central A/C and Heating Unit Air Filters	Clean or replace	-----
33	Battery Terminals	Clean and coat terminals	Battery terminal coating
34	Air Tank Drain Valves	Drain accumulated water (see note 9)	-----

4) SERVICE EVERY 25,000 MILES (40 000 km)

Item	Description	Remarks	Lubricant
29	Optional Primary Fuel Filter/Water Separator (RACOR)	Change cartridge element	Fill with clean fuel
19	Automatic Transmission Oil Filter	Change cartridge	-----
23	Differential Oil	Drain and refill differential	(see note 4)
35	Engine Crankcase Breathers	Inspect and replace if necessary	-----
36	Optional Spin-on Type Coolant Filters ("Perry" filter)	Change both cartridges	-----
37	Wheel Bearing Oil (front and tag axles)	Drain and refill (see note 10)	G-1

5) SERVICE EVERY 50,000 MILES (80 000 km)

Item	Description	Remarks	Lubricant
24	Coolant Filter (strainer)	Clean strainer (see note 5)	-----
38	Automatic Transmission Oil	Drain and refill	0-2
39	Power Steering Oil Filter	Change cartridge element	-----
40	Air Dryer (AD-2)	Inspect element and replace if necessary	-----

OWNER ASSISTANCE

If you need assistance, proceed as follows:

1. Refer to the SERVICE CENTER DIRECTORY supplied with your vehicle.
2. Discuss the matter with the nearest PREVOST CAR INC. distribution center SERVICE DEPARTMENT PERSONNEL.
3. If your problem remains unsolved, contact your nearest PREVOST CAR INC. SERVICE REPRESENTATIVE at the following numbers:

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Customer service

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SERVICE LITERATURE

Additional copies of the following service literature are available on request and at low cost. These will be helpful to your mechanic and driver.

- **Maintenance Manual**
- **Owner's manual**
- **Parts Manual**
- **Service Center Directory**

To order the desired manual(s), please contact your local distributor or write to:

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ATT.: TECHNICAL PUBLICATIONS DEPARTMENT
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Specify the complete vehicle serial number. Allow 30 days for delivery.

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